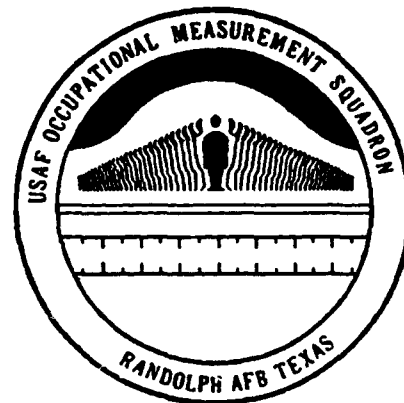


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UNITED STATES  
AIR FORCE



# OCCUPATIONAL SURVEY REPORT

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MAY 28 1992

GRAPHICS CAREER LADDER

AFSC 231X1

AFPT 90-231-927

JANUARY 1992

OCCUPATIONAL ANALYSIS PROGRAM  
USAF OCCUPATIONAL MEASUREMENT SQUADRON  
AIR TRAINING COMMAND  
RANDOLPH AFB, TEXAS 78150-5000

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## PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Graphics career ladder (AFSC 231X1). Authority for conducting occupational surveys is contained in AFR 35-2. Computer products used in this report are available for use by operations and training officials.

Mr Stan Curtis, Inventory Development Specialist, developed the survey instrument; Mrs Joan T. Brooks and 1st Lt Lester A. Ball, Occupational Analysts, analyzed the data and wrote the final report. Ms Olga Velez provided computer programming support, and Mr Richard G. Ramos provided administrative support. Lt Col Johnny M. Collins, Chief, Airman Analysis Section, Occupational Analysis Branch, USAF Occupational Measurement Squadron, reviewed and approved this report for release.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to the USAF Occupational Measurement Squadron, Attention: Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas, 78150-5000 (DSN 487-6623).

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## SUMMARY OF RESULTS

1. Survey Coverage: The Graphics (AFSC 231X1) career ladder was surveyed to obtain current task and equipment data for use in examining current training programs. Survey results are based on responses from 420 AFSC 231X1 personnel, which constitute 63 percent of the assigned population.
2. Specialty Jobs: Overall, two jobs were identified in the AFSC 231X1 specialty, with 90 percent working in the Graphics Technician job and 5 percent working in the Supervisor job. Personnel in the Graphics Technician job perform a variety of tasks related to performing graphics reproduction functions: preparing charts, graphs, posters, signs, etc., and preparing view-graph slides. Within the Graphics Technician job, four variations were identified: Graphic Imaging, Viewgraphs, NCOIC, and Freehand.
3. Career Ladder Progression: Personnel in the Graphics career ladder show a typical pattern of career ladder progression. The 3- and 5-skill-level personnel perform essentially a technical job. At the 7-skill level, first-line supervisors perform a mixture of technical and supervisory tasks. Specialty descriptions in AFR 39-1 provide a broad and accurate overview of tasks and duties performed within the career ladder.
4. Training Analysis: A match of survey data to the AFSC 231X1 Specialty Training Standard (STS) identified only one line item on the STS not supported by survey data. A similar match of data to the Plan of Instruction (POI) for the G3ABR23131 course revealed that only one POI objective is not supported. Career ladder functional managers and training personnel should carefully review these nonsupported STS and POI items to justify their continued inclusion in the training documents.
5. Job Satisfaction Analysis: Overall, AFSC 231X1 respondents are generally satisfied with their jobs. Personnel in the Graphics Technician job are more satisfied than members of the Supervisor group. When compared to other direct support personnel surveyed in 1990, AFSC 231X1 personnel show somewhat higher job satisfaction. Compared to the 1983 Graphics survey, job satisfaction has generally improved.
6. Implications: The identified career ladder structure for the AFSC 231X1 career ladder in the present survey was similar to that of 1983. The AFR 39-1 job descriptions accurately describe the jobs and tasks performed by personnel at all skill levels, and job satisfaction was positive for the jobs identified. Analysis of the training documents suggests that both the STS and the POI adequately cover the training requirement of career ladder personnel.

OCCUPATIONAL SURVEY REPORT  
GRAPHICS CAREER LADDER  
(AFSC 231X1)

INTRODUCTION

This is a report of an occupational survey of the Graphics career ladder conducted by the Occupational Analysis Branch, USAF Occupational Measurement Squadron. The HQ ATC Intelligence/Space Training Division (TTOI) requested this survey to project, plan, and develop Career Development Courses (CDC), Specialty Training Standards (STS), and training for this career field due to technological advancements associated with graphic imaging. The last survey results pertaining to this career ladder were published in January 1983.

Background

As described in the AFR 39-1 Specialty Descriptions for AFSC 23111/31/51, 3- and 5-skill-level members are responsible for developing layouts for direct viewing, printing, reproduction, photographic, and televised presentations; preparing graphs and charts; compiling and depicting data using various equipment, drafting instruments, and techniques; accomplishing special displays and exhibits; observing copyright and reproduction restrictions; using photocomposing and mechanical lettering machines, graphic imaging systems, copy cameras, diazo, serigraphic, and similar printing, duplicating, and processing equipment or methods; performing operator maintenance and adjustment of reproduction equipment; and preparing anatomical and pathological sketches or drawings.

In addition to the above, 7-skill-level members are also responsible for administering operating expenditures, preparing future operating budget estimates, and ensuring operator preventive maintenance and periodic equipment calibration.

Initial 3-skill-level training for AFSC 231X1 personnel is provided through a Category B (11 week, 2 day) interservice course at Lowry AFB CO. The Apprentice Graphics Specialist course, G3ABR23131, covers introduction to graphics, lettering, basic drawing and perspective; applying basic and illustrating techniques; reproduction methods and processes; visual communication; and graphic imaging systems.

Entry into the career ladder currently requires an Armed Forces Vocational Aptitude Battery Mechanical score of 43 and an X factor of G (40 lbs).

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## SURVEY METHODOLOGY

### Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-231-927, dated 7 June 1990. A tentative task list was prepared after reviewing career ladder publications and directives and tasks from the previous AFSC 231X1 Occupational Survey Report (OSR). The preliminary task list was refined and validated through personal interviews with 69 subject-matter experts selected to cover a variety of major commands (MAJCOM) at the following locations:

<u>BASE</u>	<u>REASON FOR VISIT</u>
Lowry AFB CO	Location of ATC Technical Training School
Gentile AFS OH	Unique operation, design, and buildup of comprehensive displays
Wright-Patterson AFB OH	MAJCOM and R&D support
Offutt AFB NE	MAJCOM and Strategic Intelligence Support
Bergstrom AFB TX	Representation for TAC
Wilford Hall USAF Medical Center TX	Medical Illustration Operation
USAF School of Aerospace Medicine TX	Medical Illustration and R&D Support
Carswell AFB TX	Representation for SAC
Kirtland AFB NM	Representation for MAC
Hickam AFB HI	MAJCOM Overseas support
Peterson AFB CO	"Blank Check" operation
Ramstein AB GE	Overseas support

Other personnel contacted included Air Force Military Personnel Center classification personnel, functional and resource managers, the Air Force functional manager, and the HQ ATC Training Staff Officer for AFSC 231X1.



The resulting job inventory contained a comprehensive listing of 416 tasks grouped under 16 duty headings, with a background section requesting such information as grade, job title, time in present job, time in service, job satisfaction, and equipment maintained in performance of an incumbent's job.

### Survey Administration

From November 1990 through May 1991, Consolidated Base Personnel Offices at operational bases worldwide administered the inventory to all eligible DAFSC 231X1 personnel. Members eligible for the survey consisted of the total assigned 3-, 5-, and 7-skill-level population, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring during the time inventories were administered to the field; and (4) personnel in their job less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Human Resources Directorate, Armstrong Laboratory.

Each individual who completed the inventory first filled in an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each individual then rated each of these tasks on a 9-point scale showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount spent).

To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

### Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across major commands (MAJCOM) and military paygrades. Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 231X1 personnel as of May 1990. The 420 respondents in the final sample represent 63 percent of all assigned AFSC 231X1 personnel. Table 2 reflects the percentage distribution by paygrade groups. As shown by both tables, the survey sample accurately reflects the overall AFSC 231X1 population.

TABLE 1  
AFSC 231X1 MAJCOM DISTRIBUTION

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
MAC	41	36
TAC	23	22
SAC	5	6
AFELEM	5	4
AFSC	4	3
AFSPACECOM	3	4
USAFE	2	3
PACAF	2	7
AFLC	1	1
ATC	1	2
AFTAC	1	1
OTHER*	12	11

Total Assigned as of May 1990: 668  
Total Eligible for Survey: 522\*\*  
Total in Sample: 420  
Percent of Eligible in Sample: 80%  
Percent of Assigned in Sample: 63%

\* Includes AFIA, AFOSI, AU, AFRES, ESC, AFCC, AFSINC, AFDW, EUR, JMMC, AFMPC, AAC, USAFA, ANG, and ESP

\*\* Excludes those in PCS, retirement, discharge, or hospital status; and those with less than 6 weeks on the job

TABLE 2  
PAYGRADE DISTRIBUTION OF AFSC 231X1

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AIRMAN	10	9
E4	37	38
E5	26	25
E6	15	15
E7	11	12

\* Assigned strength as of May 1990

NOTE: Columns may not add to 100 percent due to rounding

### Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 231X1 personnel (generally E-6 or E-7 technicians) also completed a second booklet for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the job inventories. This information is used in a number of different analyses discussed in more detail within the report.

Task Difficulty (TD). Each individual completing a TD booklet was asked to rate all of the tasks on a 9-point scale (from extremely low to extremely high) as to the relative difficulty of each task in the inventory. Difficulty is defined as the length of time required by the average incumbent to learn to do the task. Task difficulty data were independently collected from 44 experienced 7-skill-level personnel stationed worldwide. Interrater reliability was calculated and found acceptable. Ratings were standardized, so tasks have an average difficulty rating of 5.00, with a standard deviation of 1.00. The resulting data yield essentially a rank ordering of tasks indicating the degree of difficulty for each task in the inventory.

Training Emphasis (TE). Individuals completing TE booklets were asked to rate tasks on a 10-point scale from no training required to extremely high amount of training emphasis. Training emphasis is a rating of which tasks require emphasis in structured training for first-term personnel. Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job training (OJT), or any other organized training method. Training emphasis data were independently collected from 40 experienced 7-skill level personnel stationed worldwide. As with TD ratings, the interrater reliability was also acceptable. In this specialty, tasks rated high in TE have ratings of 3.79 and above, with an average rating of 2.33. As was discussed in the TD section above, TE data may also be used to rank order tasks, indicating those tasks which senior NCOs in the field consider the most important for the first-term airmen to know.

When used in conjunction with the primary criterion of percent members performing, TD and TE ratings can provide insight into first-term personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting AFS entry-level jobs.

### **SPECIALTY JOBS (Career Ladder Structure)**

Each USAF Occupational Analysis begins with an examination of the career ladder structure. The structure of jobs within the Graphics career ladder was examined on the basis of similarity of tasks performed and the percent of time spent ratings provided by job incumbents, independent of other specialty background factors.

Each individual in the sample performs a set of tasks called a job. An automated job clustering program organizes individual jobs into similar units of work. This hierarchical grouping program is a basic part of the Comprehensive Occupational Data Analysis Program system for job analysis. Each individual job description (all the tasks performed by that individual and the relative amount of time spent on those tasks) in the sample is compared to every other job description in terms of tasks performed and the relative amount of time spent on each task in the job inventory. The automated system locates the two job descriptions with the most similar tasks and percent time ratings and combines them to form a composite job description. In successive stages, the system adds new members to this initial group, or forms new groups based on the similarity of tasks performed and similar time ratings in the individual job descriptions.

The basic identifying group used in the hierarchical job structuring process is the job type. When there is a substantial degree of similarity between job types, they are grouped together and identified as a cluster. Specialized job types too dissimilar to fit within a cluster are labeled independent job types (IJT). The job structure resulting from this grouping process (the various jobs within the career ladder) can be used to evaluate the accuracy of career ladder documents (AFR 39-1 Specialty Descriptions and STS) and to gain a better understanding of current utilization patterns. The above terminology will be used in the discussion of the AFSC 231X1 career ladder structure.

### Overview of Specialty Jobs

Based on the similarity of tasks performed and the amount of time spent performing each task, two clusters were identified within the survey sample. Figure 1 illustrates the division of jobs performed by AFSC 231X1 personnel. A listing of these jobs is provided below. Table 3 presents the relative time spent by respondents in each duty. The stage (ST) number shown beside each title references computer-printed information; the letter ("N") stands for the number of personnel in each group.

#### I. GRAPHICS TECHNICIAN CLUSTER (ST0014, N=378)

- A. Graphic Imaging (ST0029, N=24)
- B. Viewgraphs (ST0028, N=28)
- C. NCOIC (ST0068, N=99)
- D. Freehand (ST0051, N=14)

#### II. SUPERVISOR CLUSTER (ST0012, N=21)

The respondents forming these groups account for 95 percent of the survey sample. The remaining 5 percent were performing tasks or series of tasks which did not group with either of the defined jobs. Job titles given by

## AFSC 231X1 CAREER LADDER JOBS

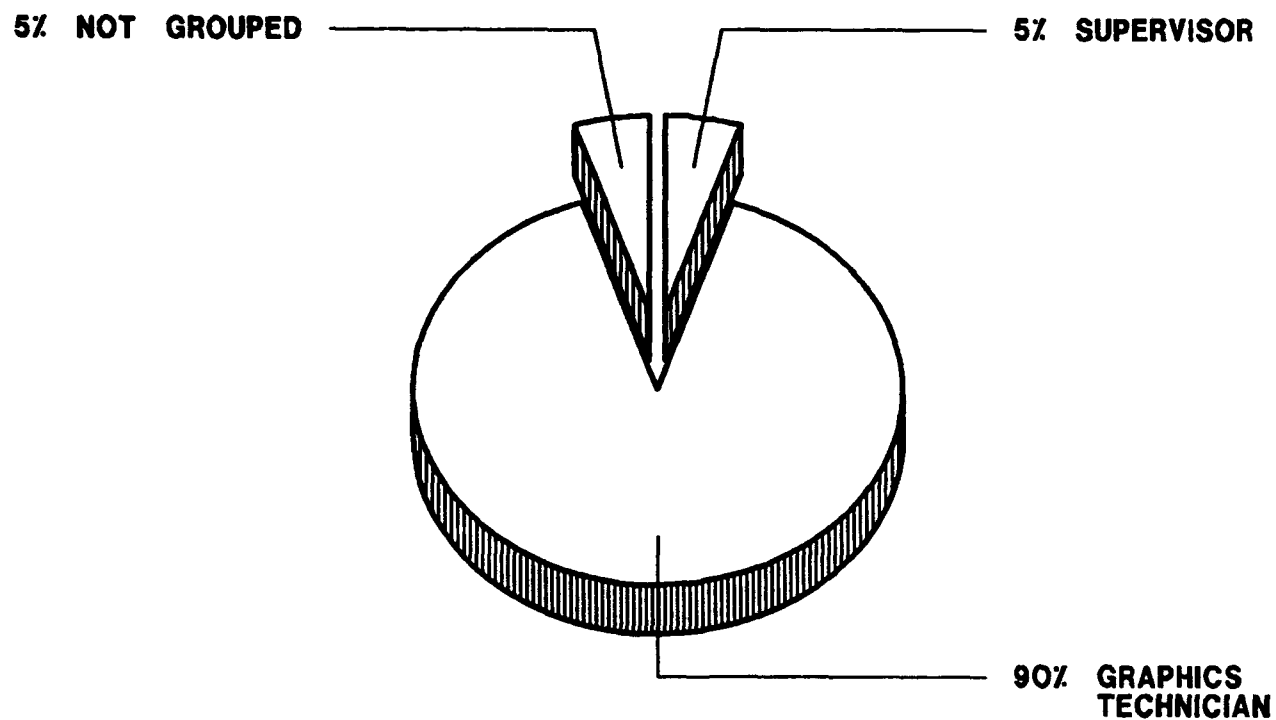


Figure 1

TABLE 3  
DISTRIBUTION OF DUTY TIME SPENT BY MEMBERS OF CAREER LADDER  
(RELATIVE PERCENT OF JOB TIME)

<u>DUTIES</u>	<u>GRAPHICS TECHNICIAN (ST0014, N=378)</u>	<u>SUPERVISOR (ST0012, N=21)</u>
A ORGANIZING AND PLANNING	7	21
B DIRECTING AND IMPLEMENTING	4	17
C INSPECTING AND EVALUATING	4	18
D TRAINING	3	9
E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY ACTIVITIES	8	17
F PERFORMING GENERAL GRAPHICS REPRODUCTION AND ILLUSTRATION ACTIVITIES	33	7
G PREPARING CHARTS AND GRAPHS	6	1
H PREPARING CERTIFICATES, AWARDS, NAMEPLATES, OR TROPHIES	3	*
I PREPARING SCREEN PRINTING (SILKSCREEN) PRODUCTIONS	*	*
J PREPARING VIEWGRAPH SLIDES	11	2
K PREPARING 35MM SLIDES	4	1
L PREPARING TELEVISION (TV) GRAPHICS	*	0
M PERFORMING TECHNICAL DRAWING ACTIVITIES	1	1
N PREPARING ANATOMICAL OR PATHOLOGICAL DRAWINGS	*	*
O PREPARING MOVIES, MOULAGES, EXHIBITS OR DISPLAYS	1	1
P PERFORMING GRAPHIC IMAGING SYSTEMS FUNCTIONS	15	5

\* Denotes less than 1 percent

respondents which were representative of these personnel included Inspector, Computer Systems Manager, Assistant Chief Base Support, Customer Service, and CDC Writer.

Table 4 displays selected background information, such as DAFSC distributions across each group, predominant paygrades, average months in service (i.e., TAFMS), and average number of tasks performed. For example, Table 4 shows that the Graphics Technician cluster has 378 members who have an average paygrade of E-5 and perform an average of 96 tasks.

#### Group Descriptions

The following paragraphs contain brief descriptions of the two clusters identified through the career ladder structure analysis. Appendix A lists representative tasks for both groups.

I. GRAPHICS TECHNICIAN CLUSTER (ST0014). The 378 members of this job represent 90 percent of the total survey sample. The overall mission of these members involves preparing viewgraph slides, charts, and graphs; designing layouts, and coordinating with customers. Members of the Graphics Technician job perform virtually all the tasks comprising the specialty. They are responsible for essentially the full range of functions of the career ladder, including graphics reproduction and illustration activities, graphic imaging systems functions, and preparing viewgraph slides. Members of this job report an average grade of E-5 and an average of slightly over 9 years' time in the service. Twenty-eight percent are in their first enlistment, and 60 percent report holding a 5-skill-level DAFSC. Some of the most representative tasks performed by members of this job include:

- aligning and mounting viewgraph slides or overlays
- arranging layouts for posters, signs, or publication masters
- adhering emblems, symbols, copy bodies, titles, or drawings on graphics or masters
- arranging layouts for charts or graphs
- proofreading final graphics
- designing layouts for certificates, awards, nameplates, or plaques
- designing viewgraph slide layouts
- coordinating format preparations for viewgraph slides
- masters with customers inking lines on graphics
- coordinating details of graphics' work requests with users
- cutting illustration boards



TABLE 4  
SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	GRAPHICS TECHNICIAN (ST0012)	SUPERVISOR (ST0014)
NUMBER IN GROUP	378	21
PERCENT OF SAMPLE	90%	5%
PERCENT IN CONUS	70%	48%
<hr/>		
DAFSC DISTRIBUTION (PERCENT)		
23131	6%	0%
23151	60%	19%
23171	33%	81%
<hr/>		
AVERAGE PAYGRADE	E-5	E-6
AVERAGE MONTHS IN PRESENT JOB	40	23
AVERAGE T1CF (MOS)	95	164
AVERAGE TAFMS (MOS)	111	198
<hr/>		
PERCENT IN FIRST ENLISTMENT	28%	0%
PERCENT SUPERVISING	1%	5%
AVERAGE NUMBER OF TASKS PERFORMED	96	100

Within the cluster, four variations were found: Graphic Imaging, Viewgraphs, NCOIC, and Freehand. Although these jobs deal with a variety of graphics reproduction and illustration activities, they were identified as a result of the amount of time spent focusing on graphic imaging, viewgraphs, supervisory tasks, and freehand work.

II. SUPERVISOR CLUSTER (ST0012). The 21 members of this group represent 5 percent of the total survey sample. These members perform supervisory duties almost exclusively. Very little time is spent producing graphics. Members spend 82 percent of their relative duty time on tasks pertaining to supervising, administering, and training (Duties A through E). Job titles given by respondents which were representative of these personnel include Visual Information Manager, Graphics Section Supervisor, and NCOIC of Production Control. Representative tasks for this group include:

- determining work priorities
- participating in general meetings, such as staff meetings, briefings, or workshops, other than conducting
- establishing work schedules
- writing EPRs
- inspecting personnel for compliance with military standards
- counseling personnel on personal or military-related matters
- planning or scheduling work priorities
- establishing performance standards for subordinates
- reviewing requests for audiovisual products
- planning or scheduling work assignments
- scheduling personnel for leaves, passes, or TDY
- evaluating personnel for compliance with performance standards

Fifty-two percent of the group is located overseas. Overall, they have an average TAFMS of 16 1/2 years; 11 of the 21 respondents are master sergeants.

#### Comparison Of Current Group Descriptions To Previous Study

The results of the specialty job analysis were compared to the previous Occupational Survey Report (OSR), AFPT 90-231-434, dated July 1983, which included data on Army and Air Force graphics personnel. Table 5 lists the major jobs identified in the 1991 survey and their equivalent jobs from the 1983 OSR. The jobs identified in the 1983 OSR, as being performed primarily by Army personnel are not included. A review of the jobs performed by the current sample indicates that all the 1991 job groups were matched to similar job groups identified in the 1983 report for Air Force personnel.

The identified career ladder structure for the AFSC 231X1 career ladder in the present survey was more homogenous than that of 1983, indicating the types of jobs which existed in 1983 are no longer sufficiently specialized to separate them into unique job groups today. The 1991 survey indicates that

TABLE 5

## JOB SPECIALTY COMPARISONS BETWEEN CURRENT AND 1983 SURVEY

<u>CURRENT SURVEY (N=420)</u>		<u>PERCENT OF SAMPLE</u>	<u>1983 SURVEY (N=808)</u>	<u>PERCENT OF SAMPLE</u>
1.	GRAPHICS TECHNICIAN CLUSTER (N=378) A. GRAPHIC IMAGING (N=51) B. VIEWGRAPHS (N=28) C. NCOIC (N=99) D. FREEHAND (N=14) E. OTHER (N=213)	90	1. GRAPHICS SPECIALIST (N=325) 2. NOT IDENTIFIED 3. VIEWGRAPH SPECIALISTS (N=56) 4. FIRST-LINE SUPERVISORS (N=108)	40  7 13
2.	SUPERVISOR CLUSTER (N=21)	5	5. NOT IDENTIFIED	
3.	NOT GROUPED (N=21)	5	6. N/A	
4.	N/A		7. AUDIOVISUAL MANAGERS (N=88)	11
5.	N/A		8. NOT GROUPED (N=69)	9
6.	N/A		9. ILLUSTRATORS (N=27)	3
7.	N/A		10. TV GRAPHICS SPECIALISTS (N=9)	1
8.	N/A		11. SILKSCREEN GRAPHICS SPECIALISTS (N=7)	1
9.	N/A		12. SLIDE SPECIALISTS (N=7)	1
10.	N/A		13. LIMITED GRAPHICS SPECIALISTS (N=16)	2
			14. SILKSCREEN ARTISTS (N=9)	1
			15. DRAFTSMEN (N=48)	1

jobs in the 1983 survey such as Illustrators, TV Graphics Specialists, and Draftsmen continue to be accomplished, but are essentially a small part of the tasks performed by the Graphics Technician personnel.

### ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the STS, reflect what career ladder personnel are actually doing in the field.

A comparison of the duty and task performance between DAFSCs 23131 and 23151 indicates that, while there are some minor differences, the jobs they perform are essentially the same. Therefore, they will be discussed as a combined group in this report. Nine-skill level and CEM code personnel in the 23XXX career field were not surveyed and will not be discussed.

The distribution of skill-level groups across the career ladder jobs is displayed in Table 6, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across the skill-level groups.

A typical pattern of progression is noted within the AFSC 231X1 career ladder, with personnel at the lower skill levels spending most of their time on technical tasks. More relative time is spent on duties involving supervisory, managerial, and administrative tasks (see Table 7, Duties A, B, C, D, and E) as they move upward to the 7-skill level. It is also obvious, however, that 7-skill-level personnel are still involved with technical task performance, as will be pointed out in the specific skill-level group discussions below.

#### Skill-Level Descriptions

DAFSC 23131/51. The 269 airmen in the 3- and 5-skill-level group (representing 64 percent of the survey sample) perform an average of 85 tasks, with 52 tasks accounting for approximately 50 percent of their time. As shown in Table 6, 94 percent of these airmen are in the Graphics Technician cluster. They spend approximately 34 percent of their time performing general graphics reproduction and illustration activities, while 16 percent of their time is spent performing graphic imaging systems functions (see Table 7).

Examples of tasks likely to be performed by 3- and 5-skill-level personnel include: aligning and mounting viewgraph slides or overlays and arranging layouts for posters, signs, or publication masters. Table 8 displays selected representative tasks performed by a majority of these airmen, and Table 9 shows tasks which best differentiate 3- and 5-skill-level personnel from 7-skill-level members.

TABLE 6  
DISTRIBUTION OF SKILL-LEVEL PERSONNEL  
ACROSS CAREER LADDER JOBS

<u>JOBS</u>	<u>DAFSC 23131/23151</u> <u>(N=269)</u>		<u>DAFSC 23171</u> <u>(N=151)</u>	
	<u>NUMBER</u>	<u>PERCENT</u>	<u>NUMBER</u>	<u>PERCENT</u>
1 GRAPHICS TECHNICIAN	252	94%	126	83%
2 SUPERVISOR	4	1%	17	11%
3 NOT GROUPED	13	5%	8	5%

NOTE: Columns may not add to 100 percent due to rounding

TABLE 7  
RELATIVE PERCENT TIME SPENT  
PERFORMING DUTIES BY DAFSC GROUPS

<u>DUTIES</u>	<u>DAFSC 23131/23151 (N=269)</u>	<u>DAFSC 23171 (N=151)</u>
A ORGANIZING AND PLANNING	6	11
B DIRECTING AND IMPLEMENTING	3	7
C INSPECTING AND EVALUATING	2	8
D TRAINING	2	5
E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY ACTIVITIES	7	10
F PERFORMING GENERAL GRAPHICS REPRODUCTION AND ILLUSTRATION ACTIVITIES	34	25
G PREPARING CHARTS AND GRAPHS	6	4
H PREPARING CERTIFICATES, AWARDS, NAMEPLATES, PLAQUES, OR TROPHIES	3	2
I PREPARING SCREEN PRINTING (SILKSCREEN) PRODUCTIONS	*	*
J PREPARING VIEWGRAPH SLIDES	12	10
K PREPARING 35MM SLIDES	5	3
L PREPARING TELEVISION (TV) GRAPHICS	*	*
M PERFORMING TECHNICAL DRAWING ACTIVITIES	1	1
N PREPARING ANATOMICAL OR PATHOLOGICAL DRAWINGS	*	*
O PREPARING MODELS, MOULAGES, EXHIBITS, OR DISPLAYS	1	1
P PERFORMING GRAPHIC IMAGING SYSTEMS FUNCTIONS	16	12

\* Denotes less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 8  
 REPRESENTATIVE TASKS PERFORMED BY DAFSC 23131/23151  
 SKILL LEVEL PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=269)
J295 ALIGN AND MOUNT VIEWGRAPH SLIDES OR OVERLAYS	90
F189 ARRANGE LAYOUTS FOR POSTERS, SIGNS, OR PUBLICATION MASTERS	88
F184 ADHERE EMBLEMS, SYMBOLS, COPY BODIES, TITLES, OR DRAWINGS ON GRAPHICS OR MASTERS	87
G254 ARRANGE LAYOUTS FOR CHARTS OR GRAPHS	84
H268 DESIGN LAYOUTS FOR CERTIFICATES, AWARDS, NAMEPLATES, OR PLAQUES	83
F214 INK LINES ON GRAPHICS	81
F241 PROOFREAD FINAL GRAPHICS	80
J299 DESIGN VIEWGRAPH SLIDE LAYOUTS	79
F201 CUT ILLUSTRATION BOARDS	79
J297 COORDINATE FORMAT PREPARATIONS FOR VIEWGRAPH SLIDE	78
F213 DRY MOUNT GRAPHIC PRODUCTS USING ADHESIVES	78
F198 COORDINATE DETAILS OF GRAPHICS WORK REQUESTS WITH USERS	76
G261 PRODUCE ORGANIZATIONAL CHARTS	76
F221 MAINTAIN COMPLETED ARTWORK OR MASTERS FILES	75
J301 PRODUCE VIEWGRAPH SLIDE OVERLAY MASTERS	74
F204 DETERMINE COLOR SCHEMES FOR GRAPHICS	74
G255 PRODUCE BAR GRAPHS	72

TABLE 9

REPRESENTATIVE TASK DIFFERENCES BETWEEN  
DAFSC 23131/23151 AND DAFSC 23171 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 23131/23151 (N=269)	DAFSC 23171 (N=151)	DIFFERENCE
P402 LETTER CERTIFICATES USING LASER PRINTERS	55	36	-19
C78 EVALUATE PERSONNEL FOR AWARDS, DECORATIONS, PROMOTION, DEMOTION, OR RECLASSIFICATION	9	42	-33
A3 DETERMINE LOGISTICS REQUIREMENTS, SUCH AS PERSONNEL, SPACE, EQUIPMENT, OR SUPPLIES	25	58	-33
C89 INSPECT PERSONNEL FOR COMPLIANCE WITH MILITARY STANDARDS	13	46	-33
C79 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS	14	46	-32
A31 SCHEDULE PERSONNEL FOR LEAVES, PASSES, OR TDY	13	44	-31
B56 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	11	42	-31
A21 ESTABLISH WORK SCHEDULES	19	48	-29
C93 PERFORM SELF-INSPECTIONS	19	48	-29
C77 EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	17	46	-29
A24 PLAN OR SCHEDULE WORK ASSIGNMENTS	30	58	-28



DAFSC 23171. Seven-skill-level personnel, representing 36 percent of the survey sample, perform an average of 106 tasks, with 75 tasks accounting for 50 percent of their relative job time. Forty-one percent of their relative job time is spent on tasks in the supervisory, managerial, training, and administrative duties, with the remaining 59 percent of their time dedicated to technical duties (see Table 7). Table 10 lists representative tasks for these incumbents. The display of tasks in Table 10 shows these senior personnel perform the same broad range of technical tasks as junior personnel, while also being responsible for supervision in the shops.

Tasks which best differentiate the 7-skill-level personnel from their junior counterparts are presented in Table 9. As expected, the key difference is a greater emphasis on supervisory functions for 7-skill-level airmen. Examples of tasks with the greatest difference in members performing include: evaluate personnel for awards, decorations, promotion, demotion, or reclassification, and determine logistics requirements such as personnel, space, equipment, or supplies.

### Summary

Normal career ladder progression within the AFSC 231X1 career ladder is evident, with personnel at the 3- and 5-skill levels spending the vast majority of their job time performing technical tasks. At the 7-skill level, although members still spend 59 percent of their relative duty time on graphics duties, a shift toward supervisory functions is clear.

## ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

Survey data were compared to the AFR 39-1 Specialty Descriptions for Graphics Specialists and Technicians, dated 15 March 1991. The descriptions for the 3-, 5-, and 7-skill levels were accurate, depicting the highly technical aspect of the job, as well as the increase in supervisory responsibilities, previously described in the DAFSC analysis. The descriptions also capture the primary responsibilities of members in the two jobs identified by the job structure analysis process.

## TRAINING ANALYSIS

Occupational survey data represent one of many sources of information which can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment. Factors which may be used in evaluating training include the overall description of the job being performed by first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-job (1-24 month TAFMS) or

TABLE 10  
 REPRESENTATIVE TASKS PERFORMED BY DAFSC 23171  
 SKILL-LEVEL PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=151)
J295 ALIGN AND MOUNT VIEWGRAPH SLIDES OR OVERLAYS	84
F189 ARRANGE LAYOUTS FOR POSTERS, SIGNS, OR PUBLICATION MASTERS	77
F184 ADHERE EMBLEMS, SYMBOLS, COPY BODIES, TITLES, OR DRAWINGS ON GRAPHICS OR MASTERS	76
F241 PROOFREAD FINAL GRAPHICS	75
J299 DESIGN VIEWGRAPH SLIDE LAYOUTS	74
A5 DETERMINE WORK PRIORITIES	74
F198 COORDINATE DETAILS OF GRAPHICS WORK REQUESTS WITH USERS	72
J297 COORDINATE FORMAT PREPARATIONS FOR VIEWGRAPH SLIDE MASTERS WITH CUSTOMERS	72
A22 PARTICIPATE IN GENERAL MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, OR WORKSHOPS, OTHER THAN CONDUCTING	72
G254 ARRANGE LAYOUTS FOR CHARTS OR GRAPHS	70
H268 DESIGN LAYOUTS FOR CERTIFICATES, AWARDS, NAMEPLATES, OR PLAQUES	69
F221 MAINTAIN COMPLETED ARTWORK OR MASTERS' FILES	68
F213 DRY MOUNT GRAPHIC PRODUCTS USING ADHESIVES	68
F201 CUT ILLUSTRATION BOARDS	66
F214 INK LINES ON GRAPHICS	66
A25 PLAN OR SCHEDULE WORK PRIORITIES	64
F248 SELECT GRAPHICS FROM ILLUSTRATION MORGUES	64
J301 PRODUCE VIEWGRAPH SLIDE OVERLAY MASTERS	63
F204 DETERMINE COLOR SCHEMES FOR GRAPHICS	62
J300 INSTRUCT CUSTOMERS ON SELF-HELP VIEWGRAPH	62
G261 PRODUCE ORGANIZATIONAL CHARTS	62
J296 CLEAN VIEWGRAPH SLIDES	61
G255 PRODUCE BAR GRAPHS	61
A12 DEVELOP WORK METHODS OR PROCEDURES	61
C96 WRITE EPRs	60

first-enlistment (1-48 months TAFMS) members performing specific tasks or using certain equipment or materials, as well as TE and TD ratings (previously explained in the SURVEY METHODOLOGY section).

### First-Enlistment Personnel

In this study, there are 113 members in their first enlistment (1-48 months TAFMS), representing 27 percent of the survey sample. The job performed by these personnel covers the full range of Graphics activities. As displayed in Table 11, approximately 92 percent of the AFSC 231X1 personnel duty time is devoted to technical or administrative task performance, the majority of which is contained in three duties: General Graphic Reproduction and Illustration (38 percent), Graphic Imaging Systems (17 percent), and Viewgraph Slides (14 percent). The vast majority of first-term personnel are involved in day-to-day graphics activities. Table 12 displays some of the tasks performed by first-enlistment personnel. These tasks represent the full range of tasks performed by first-term personnel. Examples include: align and mount viewgraph slides or overlays, and arrange layouts for posters, signs, or publication masters.

### Training Emphasis and Task Difficulty Data

Training emphasis (TE) and task difficulty (TD) data are secondary factors that can assist technical school personnel in deciding what tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank-ordering of those tasks considered important for first-term airman training (TE), along with a measure of the difficulty of those tasks (TD). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-term personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To help in this determination, an Automated Training Indicator (ATI) is computed for each task in the inventory. ATI combines first-enlistment percent members performing, TE, and TD data to compute training decisions based on ATCR 52-22, Atch 1. The computed ATI is numbered 1 to 18, with an 18 being the highest level of training indicated. An ATI of 8 or less leads to a training decision of OJT only. To illustrate how the ATI is computed, if a task has received high TE and TD ratings, and also has a high percentage of first-term members performing, then a high rating is assigned to the task. With a high ATI rating, strong recommendations can be made to emphasize training the task in a resident training course.

TABLE 11  
RELATIVE TIME SPENT  
ON DUTIES BY FIRST-ENLISTMENT PERSONNEL  
(N=113)

<u>DUTIES</u>	<u>PERCENT TIME SPENT</u>
A ORGANIZING AND PLANNING	5
B DIRECTING AND IMPLEMENTING	1
C INSPECTING AND EVALUATING	1
D TRAINING	1
E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY ACTIVITIES	5
F PERFORMING GENERAL GRAPHIC REPRODUCTION AND ILLUSTRATION ACTIVITIES	38
G PREPARING CHARTS AND GRAPHS	7
H PREPARING CERTIFICATES, AWARDS, NAMEPLATES, PLAQUES, OR TROPHIES	4
I PREPARING SCREEN PRINTING (SILKSCREEN) PRODUCTIONS	*
J PREPARING VIEWGRAPH SLIDES	14
K PREPARING 35MM SLIDES	5
L PREPARING TELEVISION (TV) GRAPHICS	*
M PERFORMING TECHNICAL DRAWING ACTIVITIES	1
N PREPARING ANATOMICAL OR PATHOLOGICAL DRAWINGS	*
O PREPARING MODELS, MOULAGES, EXHIBITS, OR DISPLAYS	1
P PERFORMING GRAPHIC IMAGING SYSTEMS FUNCTIONS	17

\* Denotes less than 1 percent

TABLE 12  
REPRESENTATIVE TASKS PERFORMED  
BY 231X1 FIRST-ENLISTMENT PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=113)
J295 ALIGN AND MOUNT VIEWGRAPH SLIDES OR OVERLAYS	93
F189 ARRANGE LAYOUTS FOR POSTERS, SIGNS, OR PUBLICATION MASTERS	90
F184 ADHERE EMBLEMS, SYMBOLS, COPY BODIES, TITLES, OR DRAWINGS ON GRAPHICS OR MASTERS	89
H268 DESIGN LAYOUTS FOR CERTIFICATES, AWARDS, NAMEPLATES, OR PLAQUES	84
G254 ARRANGE LAYOUTS FOR CHARTS OR GRAPHS	84
F213 DRY MOUNT GRAPHIC PRODUCTS USING ADHESIVES	84
J299 DESIGN VIEWGRAPH SLIDE LAYOUTS	82
F241 PROOFREAD FINAL GRAPHICS	81
J297 COORDINATE FORMAT PREPARATIONS FOR VIEWGRAPH SLIDE MASTERS WITH CUSTOMERS	81
F214 INK LINES ON GRAPHICS	81
F201 CUT ILLUSTRATION BOARDS	81
F198 COORDINATE DETAILS OF GRAPHICS WORK REQUESTS WITH USERS	79
J301 PRODUCE VIEWGRAPH SLIDE OVERLAY MASTERS	77
G261 PRODUCE ORGANIZATIONAL CHARTS	77
G255 PRODUCE BAR GRAPHS	77
F204 DETERMINE COLOR SCHEMES FOR GRAPHICS	75
J305 PRODUCE VIEWGRAPH SLIDES USING THE DIAZO PROCESS	73
F251 TAPE LINES ON GRAPHICS	72
P395 CREATE NEW OR ORIGINAL ARTWORK USING GRAPHIC IMAGING SYSTEMS	71
H270 PRODUCE CARDSTOCK PLACE CARDS	71

Tasks having the highest TE ratings are listed in Table 13. Included for each task are the percentage of first-job and first-enlistment personnel performing and the TD rating. As illustrated in Table 13, these tasks pertain to a variety of technical functions within the specialty. A majority of these tasks fall into the graphic imaging systems category and the viewgraph slides category.

Table 14 lists the tasks having the highest TD ratings. The percentage of first-enlistment, 5-, and 7-skill level personnel performing, and the TE ratings are also included for each task. Most of these tasks relate to Duty N, Preparing Anatomical and Pathological Drawings. Overall, these tasks are not performed by many airmen and have low TE ratings.

Various lists of tasks, accompanied by TE and TD ratings, are contained in the TRAINING EXTRACT package and should be reviewed in detail by technical school personnel. For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the SURVEY METHODOLOGY section of this report.

### Specialty Training Standard (STS)

A comprehensive review of STS 231X1 was made by comparing survey data to STS elements. To assist specifically in the examination of the STS, technical school personnel from Lowry Technical Training Center matched job inventory tasks to appropriate sections and subsections of the STS. A complete computer listing displaying the percent members performing tasks, TE and TD ratings for each task, along with the STS matchings, has been forwarded to the technical school for their use in further detailed reviews of training documents. STS elements were reviewed in terms of training emphasis, task difficulty, and percent members performing information, as stipulated in ATCR 52-22, dated February 1989. STS paragraphs containing general knowledge information, subject-matter knowledge requirements, or supervisory responsibilities were not reviewed. Typically, tasks performed by 20 percent or more of personnel in appropriate experience or skill-level groups, such as first-enlistment (1-48 months TAFMS) and 5- and 7-skill-level groups, should be considered for inclusion in the STS. Likewise, tasks with less than 20 percent performing in all of these groups should be considered for deletion from the STS.

STS paragraphs containing performance information were reviewed. Only one line item on the STS was found to be unsupported by occupational survey data. Under the Management section of Graphic Imaging System, the tasks matched to paragraph 8c(5), System Manager, showed a very low percentage of members performing, well below the minimum 20 percent performing criterion. Training personnel and subject-matter experts should review this area to determine if inclusion in future revisions to the STS is warranted.

Tasks not matched to any element of the STS are listed at the end of the STS computer listing. These were reviewed to determine if there were any tasks concentrated around any particular functions or jobs. Of the 243 tasks not referenced to the STS, 124 are managerial or supervisory in nature and are normally not matched to an STS. Examples of technical tasks performed by 20 percent or more respondents of the STS target groups, but which are not

TABLE 13

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)  
231X1

TASKS	TNG EMP*	PERCENT MEMBERS PERFORMING		TASK DIFF**
		1ST JOB (N=021)	1ST ENL (N=113)	
F189 ARRANGE LAYOUTS FOR POSTERS, SIGNS, OR PUBLICATION MASTERS	6.50	86	90	4.60
J301 PRODUCE VIEWGRAPH SLIDE OVERLAY MASTERS	6.25	81	77	4.34
J295 ALIGN AND MOUNT VIEWGRAPH SLIDES OR OVERLAYS	6.17	90	93	3.06
J305 PRODUCE VIEWGRAPH SLIDES USING THE DIAZO PROCESS	6.02	71	73	4.20
P414 PRODUCE VIEWGRAPHS USING LASER PRINTERS	6.02	67	63	4.77
G254 ARRANGE LAYOUTS FOR CHARTS OR GRAPHS	5.97	71	84	4.62
J299 DESIGN VIEWGRAPH SLIDE LAYOUTS	5.95	100	82	4.56
F204 DETERMINE COLOR SCHEMES FOR GRAPHICS	5.90	67	75	4.47
P395 CREATE NEW OR ORIGINAL ARTWORK USING GRAPHIC IMAGING SYSTEMS	5.90	71	71	6.43
J297 COORDINATE FORMAT PREPARATIONS FOR VIEWGRAPH SLIDE MASTERS WITH CUSTOMERS	5.85	76	81	4.05
P412 PRODUCE SLIDES USING 35MM RECORDERS	5.80	52	63	5.14
E145 COMPLETE AF FORMS 833 (VISUAL INFORMATION SUPPORT REQUEST)	5.72	19	52	3.29
F198 COORDINATE DETAILS OF GRAPHICS WORK REQUESTS WITH USERS	5.63	71	79	4.23
P410 PRODUCE COLOR PAPER HARDCOPIES OF VISUAL IMAGES	5.63	33	50	4.85
P407 OPERATE 35MM FILM RECORDERS	5.57	57	65	5.15
P413 PRODUCE VIEWGRAPHS USING COLOR THERMAL PRINTERS	5.57	33	42	4.87
E164 MAINTAIN AUDIOVISUAL WORK ORDER LOG	5.45	33	44	3.60
P415 SCAN ARTWORK USING OPTICAL INPUT DEVICES	5.42	38	35	5.38
E137 ANNOTATE AF FORMS 833 (VISUAL INFORMATION SUPPORT REQUEST)	5.25	24	45	3.24
F214 INK LINES ON GRAPHICS	5.17	71	81	3.82
F241 PROOFREAD FINAL GRAPHICS	5.17	81	81	4.21
G255 PRODUCE BAR GRAPHS	5.17	86	77	4.45
H268 DESIGN LAYOUTS FOR CERTIFICATES, AWARDS, NAMEPLATES, OR PLAQUES	5.10	90	84	5.34

\* Training emphasis has an average of 2.33 and a standard deviation of 1.46 (High TE = 3.79)

\*\* Average TD rating is 5.00, and the standard deviation is 1.00

TABLE 14

## TASKS RATED HIGHEST IN TASK DIFFICULTY (TD)

TASKS	TASK DIF*	PERCENT MEMBERS PERFORMING				TNG EMP**
		1-48 TAFMS (N=113)	23151 (N=245)	23171 (N=151)		
N360 PREPARE FINAL ANATOMICAL OR PATHOLOGICAL COLOR RENDERINGS	7.38	2	2	4	.90	
P398 DEVELOP VIDEO ANIMATION	7.23	8	8	5	2.20	
F245 RETOUCH PHOTOGRAPHS USING AIRBRUSHES	7.14	4	4	3	2.10	
N363 PREPARE SKETCHES IN OPERATING ROOMS OR MORGUES	7.13	0	1	2	.77	
N361 PREPARE FINAL ANATOMICAL OR PATHOLOGICAL LINE DRAWINGS	7.10	1	2	3	1.07	
N362 PREPARE SEQUENTIAL OPERATING PROCEDURES SKETCHES	7.05	0	1	2	1.02	
N355 DRAW MEDICAL ILLUSTRATIONS	6.94	5	6	4	1.17	
N359 PREPARE DRAWINGS OF PATHOLOGICAL OR DISEASE CHARACTERISTICS OF ANATOMICAL SPECIMENS	6.86	0	1	3	.80	
A13 DRAFT BUDGET REQUIREMENTS	6.80	2	9	36	1.15	
C100 WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS, OTHER THAN TRAINING REPORTS	6.77	3	5	21	.45	
O382 PREPARE FINAL MULTIVIEW ANATOMICAL DRAWINGS FOR MODELS OR MOULAGE CONSTRUCTIONS	6.74	0	0	1	.75	
F246 RETOUCH PHOTOGRAPHS USING RETOUCH GRAYS	6.70	4	5	7	2.00	
D111 DEVELOP FORMAL COURSE CURRICULA, PLANS OF INSTRUCTION (POI), OR SPECIALTY TRAINING STANDARDS (STS)	6.64	2	5	11	.45	
N365 SHADE FINAL ANATOMICAL OR PATHOLOGICAL LINE DRAWINGS USING CHARCOAL, PENCIL, OR INKS	6.64	0	2	2	1.05	
P397 DEVELOP FONTS ELECTRONICALLY	6.59	8	9	6	2.35	
O384 PREPARE PLASTIC MOLDS FOR MODELS OR MOULAGE MODELS	6.57	0	0	1	.55	
O386 PREPARE PRELIMINARY MULTIVIEW ANATOMICAL DRAWINGS FOR MODELS OR MOULAGE CONSTRUCTIONS	6.56	0	0	1	.80	

\* Average TD rating is 5.00, and the standard deviation is 1.00

\*\* Training emphasis has an average of 2.33 and a standard deviation of 1.46 (High TE = 3.79)



referenced to any STS element, are displayed in Table 15. Training personnel and subject-matter experts should review these and other unreferenced tasks to determine if inclusion in the STS is needed.

### Plan of Instruction (POI)

Based on assistance from technical school subject-matter experts in matching job inventory tasks to POI G3ABR23131-000, dated 25 January 1991, occupational survey data were matched to related training objectives. A similar method to that of the STS analysis was employed to review the POIs. The specific data examined included percent members performing for first-enlistment (1-48 months TAFMS) personnel, TE, and TD ratings. ATI ratings for each task were also used.

POI blocks, units of instruction, and criterion objectives were compared against the standard set forth in Attachment 1, ATCR 52-22, dated 17 February 1989 (30 percent or more of the criterion first-enlistment group performing tasks trained, along with sufficiently high TE and TD ratings on those tasks). Per this guidance, tasks trained in the course which do not meet these criteria should be considered for elimination from the formal course, if not justified on some other acceptable basis.

A review of POI objectives with matched tasks reveals that only one criterion objective is not supported by OSR data. The two tasks matched to objective III 5b, solve color mixing problems using mixtures of paints to tints and shades, elicited TE ratings of 2.25 and 2.35 and TD ratings of 4.12 and 4.18. These low ratings, along with less than 30 percent members performing, warrant consideration for elimination from the formal course.

Many technical tasks performed by over 30 percent of first-enlistment personnel were not matched to the POI. Examples of these tasks, along with related survey data, are listed in Table 16. In addition to many members performing these functions, several of these tasks are rated high in terms of training emphasis and task difficulty.

In summary, the current course is on target, with most existing objectives well supported by survey data. Graphics personnel are utilizing their training in the performance of their jobs, but additional units of instruction to cover unreferenced tasks could be beneficial to the career ladder.

### Task Analysis

With the assistance of subject-matter experts, Det 5 USAFOMS, Lowry AFB CO, performed a detailed examination of career ladder tasks. The resulting task analysis appendix identifies equipment, references, conditions, cues, standards, activities, skills, and knowledge required for performing the tasks. Appendix B is provided for the development of resident and nonresident training programs.

TABLE 15

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE 231X1  
GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS	PERCENT MEMBERS PERFORMING				TNG EMP*	TASK DIF**
	1ST ENL (N=113)	DAFSC 21351 (N=245)	DAFSC 23171 (N=151)			
H268 DESIGN LAYOUTS FOR CERTIFICATES, AWARDS, NAMEPLATES, OR PLAQUES	84	83	69		5.10	5.34
H270 PRODUCE CARDSTOCK PLACE CARDS	71	65	56		3.52	4.25
H271 PRODUCE PAPER OR PARCHMENT CERTIFICATES OR AWARDS	58	54	48		3.67	5.14
K311 COORDINATE 35MM SLIDE PROCESSING OR MOUNTING SERVICES WITH PHOTO LABS	57	54	48		3.13	3.97
F249 SET TYPE ON TYPESETTER MACHINES	37	38	32		3.57	4.24
J298 CUT OR TRIM NEGATIVE FILM FOR MOUNTING	42	40	43		3.72	3.07
K315 MOUNT 35MM SLIDES	37	34	28		2.55	3.43
J304 PRODUCE VIEWGRAPH SLIDES USING PHOTOGRAPHIC PROCESSES	47	45	43		4.60	4.78
J308 SPLICE TRANSPARENCIES INTO VIEWGRAPH SLIDES	42	38	35		4.52	4.33
P390 CONDUCT OPERATOR MAINTENANCE OF HARDWARE	24	30	28		4.25	5.86
F191 CLEAN AIRBRUSH PARTS	20	23	15		2.52	3.89
F231 PERFORM OPERATOR MAINTENANCE ON TYPESETTING MACHINES	23	25	26		2.80	4.87
F240 PRODUCE TYPEWRITTEN MASTERS OR PRINTING INSERTS	22	24	18		2.52	4.25
K313 DEVELOP FILM FOR 35MM SLIDES	20	20	15		2.52	5.57

\* Training emphasis has an average of 2.33 and a standard deviation of 1.46 (High TE = 3.79)

\*\* Average TD rating is 5.00, and the standard deviation is 1.00

TABLE 16

EXAMPLES OF TASKS NOT REFERENCED TO POI WITH GREATER THAN 30% MEMBERS PERFORMING

TASKS	IE*	ATI	1ST JOB	1ST ENL	TASK DIF**
E145 COMPLETE AF FORMS 833 (VISUAL INFORMATION SUPPORT REQUEST)	5.72	18	19	52	3.29
F198 COORDINATE DETAILS OF GRAPHICS WORK REQUESTS WITH USERS	5.63	18	71	79	4.23
H268 DESIGN LAYOUTS FOR CERTIFICATES, AWARDS, NAMEPLATES, OR PLAQUES	5.10	18	90	84	5.34
J297 COORDINATE FORMAT PREPARATIONS FOR VIEWGRAPH SLIDE	5.85	18	76	81	4.05
J300 INSTRUCT CUSTOMERS ON SELF-HELP VIEWGRAPH	4.88	18	48	63	4.06
H270 PRODUCE CARDSTOCK PLACE CARDS	3.52	17	71	71	4.25
H271 PRODUCE PAPER OR PARCHMENT CERTIFICATES OR AWARDS	3.67	17	62	58	5.14
K311 COORDINATE 35MM SLIDE PROCESSING OR MOUNTING SERVICES WITH PHOTO LABS					
K321 REVIEW 35MM SLIDES	3.13	17	43	57	3.97
F234 PRODUCE ELECTROSTATIC TRANSPARENCIES	3.22	17	38	54	3.86
F249 SET TYPE ON TYPESETTER MACHINES	3.38	15	38	33	3.60
J298 CUT OR TRIM NEGATIVE FILM FOR MOUNTING	3.57	15	33	37	4.24
K315 MOUNT 35MM SLIDES	3.72	15	67	42	3.07
E137 ANNOTATE AF FORMS 833 (VISUAL INFORMATION SUPPORT REQUEST)	2.55	15	33	37	3.43
E164 MAINTAIN AUDIOVISUAL WORK ORDER LOG	5.25	12	24	45	3.24
J304 PRODUCE VIEWGRAPH SLIDES USING PHOTOGRAPHIC PROCESSES	5.45	12	33	44	3.60
J306 PRODUCE VIEWGRAPH SLIDES USING THE ELECTROSTATIC PROCESS	4.60	12	62	47	4.78
J308 SPLICE TRANSPARENCIES INTO VIEWGRAPH SLIDES	4.40	12	52	38	3.52
	4.52	12	43	42	4.33

\* Training emphasis has an average of 2.33 and a standard deviation of 1.46 (High TE = 3.79)

\*\* Average TD rating is 5.00, and the standard deviation is 1.00

## JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. The survey booklet included attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions to provide indications of job satisfaction. The responses of the current survey sample were then analyzed by making several comparisons: (1) among TAFMS groups of the AFSC 231X1 career ladder and a comparative sample of personnel from other Direct Support specialists surveyed in 1990 (AFSCs 12XXX, 222X0, 23XXX, 251X0, 39XXX, 47XXX, 49XXX, 54XXX, 55XXX, 56XXX, 571X0, 59XXX, 60XXX, 61XXX, 623X0, 631X0, 64XXX, 75XXX, 81XXX, and 821X0), (2) between current and previous survey TAFMS groups, and (3) across specialty groups identified in the SPECIALTY JOBS section of the report.

Table 17 compares first-enlistment (1-48 months TAFMS), second-enlistment (49-96 months TAFMS), and career (97+ months TAFMS) group data to corresponding enlistment groups from other Direct Support AFSCs surveyed during the previous calendar year. These data give a relative measure of how the job satisfaction of AFSC 231X1 personnel compares with that of other similar Air Force specialties. First- and second-enlistment groups of the DAFSC 231X1 sample indicate higher levels of job satisfaction than do those of the comparative sample in all areas. However, the career AFSC 231X1 group reported slightly lower job interest and utilization of talents. Overall, satisfaction for all three groups is still quite high. The high percentages of positive responses in these comparisons reflect a career ladder where personnel appear to be well satisfied with their jobs.

An indication of changes in job satisfaction perceptions within the career ladder is provided in Table 18, where TAFMS group data for 1991 survey respondents are presented, along with data from respondents to the 1983 occupational survey report of the career ladder. Generally, perceptions associated with job satisfaction have improved for all three groups except training for second enlistment and career groups.

Table 19 presents job satisfaction data for the major jobs identified in the career ladder structure for AFSC 231X1. An examination of these data can reveal the influences performing certain jobs may have on overall job satisfaction. Job satisfaction indicators for the specialty job groups suggest that members of the Graphics Technician group are more satisfied than the members of the Supervisor group. Fifty-two percent of the Supervisor personnel plan to retire or not reenlist.

TABLE 17

COMPARISON OF TAFMS GROUP JOB SATISFACTION INDICATORS  
(PERCENT MEMBERS PERFORMING)

	<u>1-48 MOS TAFMS</u>		<u>49-96 MOS TAFMS</u>		<u>97+ MOS TAFMS</u>	
	<u>231X1</u>	<u>1990</u>	<u>231X1</u>	<u>1990</u>	<u>231X1</u>	<u>1990</u>
	<u>(N=119)</u>	<u>COMP SAMPLE</u>	<u>(N=110)</u>	<u>COMP SAMPLE</u>	<u>(N=197)</u>	<u>COMP SAMPLE</u>
		<u>(N=424)</u>		<u>(N=495)</u>		<u>(N=934)</u>
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	82	74	82	80	83	84
SO-SO	13	16	14	12	12	8
DULL	4	10	5	8	5	8
<u>PERCEIVED UTILIZATION OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	82	76	85	83	84	85
LITTLE OR NOT AT ALL	17	24	15	17	16	15
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY	85	75	71	71	79	73
LITTLE OR NOT AT ALL	14	25	29	28	21	27
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>						
SATISFIED	85	70	83	66	78	75
NEUTRAL	5	10	5	12	9	6
DISSATISFIED	9	20	11	21	13	18
<u>REENLISTMENT INTENTIONS:</u>						
WILL/PROBABLY WILL REENLIST	48	48	73	70	60	73
WILL NOT/PROBABLY WILL NOT REENLIST	51	52	26	29	7	7
WILL RETIRE	N/A	N/A	N/A	*	34	20

\* Less than 1 percent

N/A - Not Applicable

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

Comparative sample is composed of all Direct Support career ladders surveyed in 1990 (includes AFSCs 12XXX, 222X0, 23XXX, 251X0, 39XXX, 47XXX, 49XXX, 54XXX, 55XXX, 56XXX, 571X0, 59XXX, 60XXX, 61XXX, 623X0, 631X0, 64XXX, 75XXX, 81XXX, and 821X0)

TABLE 18

COMPARISON OF JOB SATISFACTION DATA  
(PERCENT MEMBERS PERFORMING)

	<u>1-48 MOS TAFMS</u>			<u>49-96 MOS TAFMS</u>			<u>97+ MOS TAFMS</u>		
	1991	1983		1991	1983		1991	1983	
	231X1	231X1		231X1	231X1		231X1	231X1	
	(N=113)	(N=218)		(N=110)	(N=124)		(N=197)	(N=254)	
<u>EXPRESSED JOB INTEREST:</u>									
INTERESTING	82	65		82	72		83	80	
SO-SO	13	17		14	12		12	10	
DULL	4	18		5	12		5	7	
<u>PERCEIVED UTILIZATION OF TALENTS:</u>									
FAIRLY WELL TO PERFECTLY	82	70		85	70		84	81	
LITTLE OR NOT AT ALL	17	30		15	29		16	19	
<u>PERCEIVED UTILIZATION OF TRAINING:</u>									
FAIRLY WELL TO PERFECTLY	85	70		71	73		79	82	
LITTLE OR NOT AT ALL	14	29		29	26		21	18	
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>									
SATISFIED	85	69		83	67		78	77	
NEUTRAL	5	12		5	7		9	9	
DISSATISFIED	9	19		11	24		13	14	
<u>REENLISTMENT INTENTIONS:</u>									
WILL/PROBABLY WILL REENLIST	48	49		73	68		60	75	
WILL NOT/PROBABLY WILL NOT REENLIST	51	49		26	32		7	8	
WILL RETIRE	N/A	N/A		0	0		34	16	

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

TABLE 19

JOB SATISFACTION DATA FOR CLUSTERS AND INDEPENDENT JOB TYPES  
(PERCENT MEMBERS PERFORMING)

	<u>GRAPHICS TECHNICIAN</u>	<u>SUPERVISOR</u>
<u>EXPRESSED JOB INTEREST:</u>		
INTERESTING	83	76
SO-SO	12	14
DULL	4	10
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		
FAIRLY WELL TO PERFECTLY	84	76
LITTLE OR NOT AT ALL	15	24
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		
FAIRLY WELL TO PERFECTLY	80	66
LITTLE OR NOT AT ALL	20	33
<u>SENSE OF ACCOMPLISHMENT:</u>		
SATISFIED	83	67
NEUTRAL	6	14
DISSATISFIED	11	19
<u>REENLISTMENT INTENTIONS:</u>		
WILL/PROBABLY WILL REENLIST	61	48
WILL NOT/PROBABLY WILL NOT REENLIST	24	14
WILL RETIRE	14	38

NOTE: Columns may not add to 100 percent due to rounding or lack of response

## IMPLICATIONS

As explained in the INTRODUCTION, this survey was conducted primarily to provide training personnel with current information on the Graphics specialty for use in reviewing current training programs and training documents. The data compiled from this survey support the current structure of the AFSC 231X1 career ladder. The present classification structure, as described by the AFR 39-1 Specialty Descriptions, accurately portrays the jobs in this study.

Analysis of career ladder documents indicates both the STS and POI accurately depict the tasks performed. Both documents could use some fine-tuning, but are basically sound.

No serious job satisfaction problems appear to exist within this specialty. Overall, job satisfaction responses were almost all higher than those of a comparative sample of similar Air Force personnel surveyed in 1990.

The findings of this OSR come directly from the survey data collected from Graphics personnel worldwide. These data are readily available to training and utilization personnel, functional managers, and any other interested parties having a need for such information. Much of the data are compiled into extracts which are excellent tools in the decision-making process. These data extracts should be used when training or utilization decisions are made.



APPENDIX A  
SELECTED REPRESENTATIVE TASKS PERFORMED BY  
CAREER LADDER SPECIALTY JOB GROUPS

TABLE I  
GRAPHICS TECHNICIAN CLUSTER  
(STG0014)

GROUP SIZE: 378  
PERCENT OF SAMPLE: 95%  
AVERAGE PAYGRADE: E-5

AVERAGE TAFMS: 111 MONTHS  
AVERAGE TICF: 95 MONTHS  
PERCENT IN 1ST ENL: 28%

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
J295 Align and mount viewgraph slides or overlays	93
F189 Arrange layouts for posters, signs, or publication masters	89
F184 Adhere emblems, symbols, copy bodies, titles, or drawings on graphics or masters	89
G254 Arrange layouts for charts or graphs	84
F241 Proofread final graphics	83
H268 Design layouts for certificates, awards, nameplates, or plaques	83
J299 Design viewgraph slide layouts	81
J297 Coordinate form.t preparations for viewgraph slide masters with customers	81
F214 Ink lines on graphics	81
F198 Coordinate details of graphics work requests with users	80
F201 Cut illustration boards	80
F213 Dry mount graphic products using adhesives	79
F221 Maintain completed artwork or masters' files	77
G261 Produce organizational charts	76
J301 Produce viewgraph slide overlay masters	75
F204 Determine color schemes for graphics	75
G255 Produce bar graphs	73

TABLE II  
SUPERVISORS CLUSTER  
(STG0012)

GROUP SIZE: 21  
PERCENT OF SAMPLE: 5%  
AVERAGE PAYGRADE: E-6

AVERAGE TAFMS: 198 MONTHS  
AVERAGE TICF: 164 MONTHS  
PERCENT IN 1ST ENL: 0%

TASKS	PERCENT MEMBERS PERFORMING
A5 Determine work priorities	86
A22 Participate in general meetings, such as staff meetings, briefings, or workshops, other than conducting	86
A21 Establish work schedules	86
C96 Write EPRs	81
C89 Inspect personnel for compliance with military standards	81
B39 Counsel personnel on personal or military-related matter	76
A25 Plan or schedule work priorities	76
A17 Establish performance standards for subordinates	76
A30 Review requests for audiovisual products	76
A24 Plan or schedule work assignments	76
A31 Schedule personnel for leaves, passes, or TDY	76
C79 Evaluate personnel for compliance with performance standards	76
A3 Determine logistics requirements such as personnel, space, equipment, or supplies	76
C66 Analyze workload requirements	76
B63 Supervise Graphics Specialists (AFSC 23151)	71
A12 Develop work methods or procedures	71
C80 Evaluate procedures for storage, inventory, or inspection of supplies and property	71
C86 Evaluate work schedules	71
C98 Write recommendations for awards or decorations	71
A16 Establish organizational policies, such as office instructions (OI) or standard operating procedures (SOP)	71
B56 Interpret policies, directives, or procedures for subordinates	71

**APPENDIX B**  
**AFSC 231X1 TASK ANALYSIS**

## TASK ANALYSIS

This document provides task analysis data for Air Force Specialty Code (AFSC) 231X1, Graphics. The analysis encompasses tasks from the AFSC 231X1 Job Inventory (JI), dated 7 June 1990, as well as additional tasks identified during field interviews.

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This task analysis can be used to assist in development of resident and nonresident training programs. Copies are available upon request to the USAF Occupational Measurement Squadron, Attention: Chief, Airman Analysis Section (OMYO), Randolph AFB TX 78150-5000.

# INDEX OF TASKS

<u>TASK NUMBER</u>	<u>TASK STATEMENT</u>	<u>PAGE</u>
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00004	COMPLETE DRAWING PROJECTS.....	B17
00005	PERFORM OPERATOR'S MAINTENANCE ON DIAZO MACHINE.....	B21
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00007	PRODUCE PRINTED TEXT WITH COMPUGRAPHIC LETTERING MACHINE.....	B25
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00017	PREPARE AND PRODUCE ARTWORK FOR 35MM SLIDES.....	B57
00018	CONSTRUCT CHARTS AND GRAPHS.....	B61
00019	PREPARE ARTWORK.....	B65
00020	PREPARE ARTWORK USING COLOR SEPARATION.....	B68
00021	PREPARE VISUAL USING VIDEO EQUIPMENT.....	B71
00022	PRODUCE SLIDES WITH 35MM CAMERA/RECORDER.....	B74

## TASK ANALYSIS WORKSHEET (TAW) ELEMENTS

Each task analysis (TA) task is documented on a separate TAW. The arrangement of the data within each TAW follows:

1. TASK NUMBER: A sequential number assigned to each TA task.
2. TASK STATEMENT: A meaningful unit of work. TA tasks may be the same as JI task statements, or may include several closely related tasks from the JI. In some cases, TA task statements do not correspond to JI tasks. Numbers in parentheses that follow a TA task statement are equivalent JI numbers.
3. TASK NOTES: This section is optional and may contain brief comments or explanations to enhance understanding of the task.
4. TRAINING RECOMMENDATIONS: This section recommends where the task should be trained. Some examples are: on-the-job training, qualification training, residence training, career development courses (CDCs), etc.
5. EQUIPMENT, TOOLS, AND SUPPLIES: This section lists significant equipment, tools, and supplies required to perform the task, to include forms, listings, etc. Common items like ball point pens will not generally be listed.

When the computer is referenced under this heading, it is referring to the standard computer and all of its associated software, without any particular reference to the manufacturer of that equipment. The following is a list of the associated equipment that is included under the heading of computer:

386 or higher computer system, mouse, graphics software, MS-DOS, light pen, floppy diskettes, keyboard, digitizing tablet, video card, hard disc.
6. REFERENCES: This section lists the governing directives commonly required to perform the task.
7. CONDITIONS: Conditions state any special circumstances under which the task must be performed. If no condition is listed, the task is performed under normal office conditions.
8. CUES: Actions or directives that initiate, signal, or prompt performance of the task.
9. CONSTRAINTS: Any factors that may hinder or prevent accomplishment of the task.
10. JOB STANDARDS: This section identifies the criteria a supervisor, trainer, or task evaluator uses to decide if the task was adequately accomplished.
11. ACTIVITIES: Significant steps in performing the TA task. Activity statements are preceded by an "A".

12. SKILLS: Involve mental, physical, or manipulative activities often requiring speed, accuracy, or coordination for task accomplishment. Skills are preceded by an "S".

13. KNOWLEDGE: Knowledge, not directly observable, involves the use of mental processes enabling recall of facts, identification of concepts, application of rules or principles, solving of problems, or creative thinking, etc. Knowledge statements are preceded by a "K".

Some statements in the activity, skill, and knowledge areas have a letter and number, i.e., F210, in parenthesis at the end of the statement. This shows that the statement came directly from the job inventory (just as printed or slightly reworded) and links the statement with the applicable occupational survey data. If no reference is present, the statement was derived during interviews with specialty subject matter experts (SMEs).

Many times throughout the document there are data under the "RELATED OCCUPATIONAL SURVEY DATA" and the "USAF JOB INVENTORY TASK STATEMENTS" areas that are not referenced in the analysis. These items are related to the task being analyzed, but are subsumed under the TA task statement or a broader activity, skill, or knowledge.



14. RELATED OCCUPATIONAL SURVEY DATA: Occupational survey data is used with the Training Decisions Logic Table (ATCR 52-22, Occupational Analysis Program, Attachment 1) to determine where tasks should be trained and to what level. The following explains the data columns listed within this report.

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
							Automated Training Indicator is a numerical summary of the previous information to facilitate training decisions
							Task Difficulty is a relative measure of the difficulty of learning the task. (4.00-6.00 = average difficulty)
							Percentage of 7-skill level survey respondents who perform the task
							Percentage of 5-skill level survey respondents who perform the task
							Percentage of 1 to 48 month survey respondents who perform the task
							Percentage of 1 to 24 month survey respondents who perform the task
							Training Emphasis is a relative measure of importance to include in structured training assigned by supervisors. (Training emphasis 2.33 is the mean, with a standard deviation of 1.46. Training Emphasis of 3.79 and above is considered high.)

USAF Job Inventory duty code and task number

15. USAF JOB INVENTORY TASK STATEMENTS: The JI task numbers and statements associated with each task. The statements in this section are those most closely related to the TA task analyzed. These statements are listed in DUTY/TASK numerical order.

## ADDITIONAL INFORMATION ON TASK ANALYSIS

The majority of the tasks analyzed were broad areas that covered both computer and manual functions. To ensure complete coverage, every possible piece of equipment, tool, supply, activity, skill, and knowledge are listed. As a result, every item may not be applicable to the specific task being performed.

Automation has almost completely consumed all of the production of graphic products in the Air Force. With this requirement in the field, the excellent technical training being provided by the schoolhouse must be increased to keep pace with this rapidly changing technological field. The training needs to encompass general computer design, functions, and software packages that are available not only in the military but also those on the commercial market. Students need to have a basic knowledge of MS-DOS and graphics windows, and their application to the entire graphic production process upon graduation from school.

Areas such as silkscreening, technical drafting, and medical illustrations were not analyzed due to the low percentage of career ladder personnel performing these duties. Basic skills required by a medical illustrator are obtained through the general skills taught in the technical school. Most skills are the same, only the subject and location is different. With the availability of computer-designed clip art and letters, only the computer skills require instruction. Then, these computer skills can be adapted to specific duty requirements.

In the advent of Electronic Imaging Centers (EICs), computer training will become even more essential. There will be a growing need to ensure that all individuals entering the Graphics career ladder attend a formal school to learn the latest computer technology and all the associated equipment, e.g., printers; still, video, and television cameras; scanners; etc. According to HQ USAF, Visual Information Division, DCS/Command, Control, Communications, and Computers (SCMV), a final determination on the full implementation of EICs should be made by the end of calendar year 1991.

HQ USAF/SCMV requested an evaluation of the impact on the field if the Visual Information Media career ladder (AFSC 231X0) was merged with the Graphics and Visual Information Production-Documentation (AFSC 231X3) career ladder. There are presently two major functions performed by AFSC 231X0 personnel: Presentations and Visual Information (VI) Library. As it is proposed, VI Library personnel would merge with the AFSC 231X3 career ladder and the Presentations personnel merged with the AFSC 231X1 career ladder. MAJCOM input was also solicited by message from HQ USAF/SCMV. Input from the majority of the supervisors and managers interviewed was very favorable and they felt it was a very positive step in integrating personnel into the entire aspect of the VI community. In light of the ever-increasing advancements in technology and shrinking military force, this proposed merger would allow excellent utilization of personnel resources available to the VI community. The major concern expressed by the field was the type of cross-utilization training (CUT) that would be provided to the personnel affected. However, in

the Graphics community, it would allow personnel to follow their illustrations and creations from inception to final presentation to the requesting audience. This appears to be a very positive move concerning VI personnel.

**TASK ANALYSIS WORKSHEETS**

**GRAPHICS**

**AFSC 231X1**

TASK NUMBER: 00001

TASK STATEMENT:

MAINTAIN GRAPHICS EQUIPMENT AND SUPPLIES

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
-	-	-	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

INVENTORY LIST

REFERENCES:

AFR 700-32, VOL II; SOI; SOP; STP-11-25Q13-SM-TG

CUES:

GRAPHICS SHOP IN OPERATION  
RECEIVE WORK ORDER

JOB STANDARD:

ENSURE ADEQUATE EQUIPMENT AND SUPPLIES ARE ON HAND

ACTIVITIES:

- A - REVIEW WORK ORDER (A30)
- A - DETERMINE REQUIREMENTS FOR EQUIPMENT, TOOLS, AND SUPPLIES (A3)
- A - INVENTORY OPERATIONAL STOCK LEVEL (E173)
- A - ORDER REPLACEMENT SUPPLIES THROUGH BASE SUPPLY AND/OR LOCAL PURCHASE (E173)
- A - FOLLOW-UP ON BACK ORDERS

TASK NUMBER: 00001 (CONTINUED)

KNOWLEDGES:

- K - APPLY TECHNICAL DATA
- K - IDENTIFY EQUIPMENT REQUIREMENTS
- K - IDENTIFY SUPPLY REQUIREMENTS
- K - INTERPRET INVENTORY LIST

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
A3	1.57	10	11	26	58	6.15	2
A30	3.47	10	23	34	50	4.09	7
C66	2.45	14	16	24	47	5.46	7
E173	3.55	5	10	16	24	4.49	7
P400	2.88	10	19	24	28	6.34	7
P401	3.52	19	23	30	32	6.33	7
P404	4.70	38	50	51	46	4.77	18

USAF JOB INVENTORY TASK STATEMENTS:

- A3 Determine logistics requirements such as personnel, space, equipment, or supplies
- A30 Review requests for audiovisual products
- C66 Analyze workload requirements
- E173 Maintain supply bench stock
- P400 Evaluate computer hardware
- P401 Evaluate software
- P404 Maintain external backup files

TASK NUMBER: 00002

TASK STATEMENT:

PROCESS VISUAL INFORMATION SERVICE WORK ORDERS

TASK NOTES:

CLASSIFIED MATERIAL MUST HAVE A DD FORM 577 FILE AND ONLY AUTHORIZED PERSONNEL ARE ALLOWED TO SIGN FOR THE MATERIAL. NO TOP SECRET MATERIAL IS HANDLED WITHOUT ADEQUATE OVERNIGHT STORAGE CAPABILITY.

CUSTOMER SERVICE MAY HAVE A GRADE RESTRICTION ON WHO CAN WORK THE COUNTER.

SPACECOM - ALL WORK ORDERS MUST BE IN FINAL DRAFT FORMAT.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	-	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, AF FORM 833, COPY OF REQUESTED PRODUCT (PROOF/DRAFT), WORK ORDER LOG

REFERENCES:

AFR 700-32, VOL II; AFR 205-1; AR 380-5; MANUFACTURER'S MANUAL; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

TASK NUMBER: 00002 (CONTINUED)

CONSTRAINTS:

COMPUTER DOWN  
SHORT SUSPENSES  
HIGHER PRIORITY PROJECTS  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

JOB STANDARD:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

- A - REVIEW WORK ORDER TO ENSURE IT IS CORRECT AND AUTHORIZED (A30)
- A - LOG REQUEST IN WORK ORDER LOG, ASSIGN NUMBER AND ILLUSTRATOR (E137, E164)
- A - GIVE CUSTOMER A RECEIPT
- A - PLACE WORK ORDER IN WORK ORDER BIN, UNLESS A HIGH PRIORITY (A5)
- A - ESTABLISH COMPUTER FILE OR LOG ON LOCAL FORM
- A - MAKE ENTRIES ON REQUEST FOR AUDIOVISUAL OR GRAPHIC SERVICE FORMS
- A - ENSURE REQUIRED WORK ORDER BLOCKS ARE PROPERLY COMPLETED (E145)
- A - NOTIFY CUSTOMER WORK IS COMPLETE
- A - ENSURE CUSTOMER SIGNS WORK ORDER

SKILL:

- S - OPERATE COMPUTER

KNOWLEDGES:

- K - ANNOTATE FORMS
- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY MANAGEMENT SKILLS
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - RECALL QUALITY STANDARDS
- K - ANNOTATE WORK ORDER LOG



TASK NUMBER: 00002 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
A5	3.30	38	42	57	74	4.30	15
A30	3.47	10	23	34	50	4.09	7
E137	5.25	24	45	51	60	3.24	12
E145	5.72	19	52	53	57	3.29	18
E164	5.45	33	44	47	52	3.60	12
F198	5.63	71	79	75	72	4.23	18
F241	5.17	81	81	78	75	4.21	18
P392	4.63	14	26	35	36	5.33	11
P404	4.70	38	50	51	46	4.77	18

USAF JOB INVENTORY TASK STATEMENTS:

A5 Determine work priorities  
A30 Review requests for audiovisual products  
E137 Annotate AF Forms 833 (Visual Information Support Request)  
E145 Complete AF Forms 833 (Visual Information Support Request)  
E164 Maintain audiovisual work order log  
F198 Coordinate details of graphics work requests with users  
F241 Proofread final graphics  
P392 Create electronic filing systems  
P404 Maintain external backup files

TASK NUMBER: 00003

TASK STATEMENT:

MOUNT GRAPHIC PRODUCTS

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

VIEWGRAPH FRAMES, LIGHT TABLE GRID, TAPE (MASKING OR SCOTCH), X-ACTO KNIFE, MATTE BOARD CUTTER, MOUNTS, SPRAY MOUNTS, WAXER, DOUBLE STICK TAPE, RUBBER CEMENT, ACETATE, ROLLER

REFERENCES:

SOI; SOP; STP-11-25Q13-SM-TG

CONDITIONS:

TEMPERATURE-CONTROLLED ENVIRONMENT  
WELL LIGHTED AND VENTILATED AREA

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

TEMPERATURE TOO HOT  
SHORT SUSPENSES  
LACK OF SUPPLIES  
POWER OUTAGE

JOB STANDARD:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

TASK NUMBER: 00003 (CONTINUED)

ACTIVITIES:

VIEWGRAPH

- A - GATHER VIEWGRAPH, FRAMES, AND MOUNTS
- A - PLACE FRAME AND MOUNT ON LIGHT TABLE AND SECURE
- A - LAY VIEWGRAPH BACKWARDS ON FRAME
- A - USE GRID TO CENTER
- A - TAPE ADDITIONAL ACETATE SHEETS AS REQUIRED FOR COLOR OR PROTECTION
- A - TAPE VIEWGRAPH TO FRAME AND MOUNT ON ALL SIDES (J295, F213)

PHOTOGRAPHS AND POSTERS

- A - SELECT MOUNTING SURFACE
- A - MEASURE BOARD
- A - CUT ILLUSTRATION MATTE BOARD (F202)
- A - MARK BOARD FOR PLACEMENT
- A - LAY PHOTO FACE DOWN AND SPRAY OR RUN THROUGH WAXER (F183, F213, F226, F227)
- A - PLACE PHOTO ON GUIDELINES
- A - ALIGN AND VISUALLY CHECK
- A - MOUNT PHOTOGRAPH OR POSTER

SKILLS:

- S - USE ACETATE
- S - USE ADHESIVE PRODUCTS
- S - USE CUTTING DEVICES
- S - USE GRAPHIC TOOLS
- S - USE LIGHT TABLE

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY LAYOUT PRINCIPLES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - APPLY SAFETY PROCEDURES

TASK NUMBER: 00003 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F183	3.10	52	28	29	24	2.60	3
F199	4.32	71	69	68	55	2.88	13
F201	4.20	76	81	78	66	2.60	13
F202	3.65	67	56	55	52	3.64	17
F213	3.92	81	84	78	68	3.17	18
F226	1.75	38	29	28	17	3.38	2
F227	3.02	71	50	54	43	3.51	17
F253	1.40	10	4	2	6	3.42	2
J295	6.17	90	93	89	84	3.06	18
J296	4.57	76	65	66	61	2.46	13
J298	3.72	67	42	40	43	3.07	15
J308	4.52	43	42	38	35	4.33	12
K311	3.13	43	57	54	48	3.97	17
K316	4.85	29	41	39	42	5.35	12

USAF JOB INVENTORY TASK STATEMENTS:

F183 Adhere artwork to graphics using waxers products  
 F199 Cover charts with acetate  
 F201 Cut illustration boards  
 F202 Cut illustration matte boards  
 F213 Dry mount graphic products using adhesives  
 F226 Mount graphics using silicone sealers or glues  
 F227 Mount photos in matte boards  
 F253 Wet mount photographs  
 J295 Align and mount viewgraph slides or overlays  
 J296 Clean viewgraph slides  
 J298 Cut or trim negative film for mounting  
 J308 Splice transparencies into viewgraph slides  
 K311 Coordinate 35mm slide processing or mounting services with photo labs  
 K316 Plan 35mm illustration layouts

TASK NUMBER: 00004

TASK STATEMENT:

COMPLETE DRAWING PROJECTS

TRAINING RECOMMENDATIONS:

A			B			C		
3-SKILL LEVEL			5-SKILL LEVEL			7-SKILL LEVEL		
(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Course	CDC	OJT	Course	CDC	OJT	Course	CDC	OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, ILLUSTRATORS TOOLS AND SUPPLIES, HERCULANE/DRAFTING FILM TABLE, LEROY LETTERING SET, KROY MACHINE, LIGHT TABLE, CLIP ART, ILLUSTRATOR'S TABLE, FLAT BED SCANNER, COPY CAMERA, COPY MACHINE, REFERENCE FILES, AIRBRUSH, COMPUGRAPHIC LETTERING MACHINE, DIAZO MACHINE

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
CAPABILITY OF COMPUTER SOFTWARE  
SHORT SUSPENSES  
LACK OF SUPPLIES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

TASK NUMBER: 00004 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

- A - RESEARCH CLIP ART
- A - RESIZE EXISTING CLIP ART USING COPY CAMERA OR COPY MACHINE
- A - PREPARE DRAWING SURFACE
- A - LAY DOWN TEXT OR FORMAT ON COMPUTER
- A - SECURE DRAWING PAPER TO SURFACE
- A - MOUNT HERCULANE OR ACETATE ON LIGHT TABLE
- A - APPLY TRACING PAPER OVER TEXT
- A - APPLY INK TO PENCILED LINES USING LINE TECHNIQUE (F214)
- A - APPLY TONE USING INK WASH, SHADING SHEETS, AIRBRUSH, ETC. (F188)
- A - PROOF FOR ACCURACY
- A - PREPARE LETTERING USING COMPUGRAPHIC LETTERING MACHINE, KROY MACHINE, LEROY LETTERING SET, OR PRESS-TYPE/DRY TRANSFER (F249)
- A - LAYOUT LETTERING
- A - SCAN CLIP ART IMAGED ON PHOTOS (P415)
- A - PLACE LETTERING ON HERCULANE OR LAYOUT DESIGN ON COMPUTER
- A - PROOF DRAFT WITH CUSTOMER (F241)
- A - PRINT PRODUCT FOR CUSTOMER

SKILLS:

- S - OPERATE COMPUGRAPHIC LETTERING MACHINE
- S - OPERATE DIAZO MACHINE
- S - OPERATE COMPUTER
- S - OPERATE KROY MACHINE
- S - USE AIRBRUSH
- S - OPERATE COPY CAMERA
- S - OPERATE COPY MACHINE
- S - USE FLAT BED SCANNER
- S - USE ILLUSTRATORS TOOLS AND SUPPLIES
- S - USE ILLUSTRATORS TABLE
- S - USE LEROY LETTERING SET
- S - USE LIGHT TABLE
- S - USE REFERENCE FILES
- S - USE HERCULANE/DRAFTING FILM TABLE

TASK NUMBER: 00004 (CONTINUED)

KNOWLEDGES:

- K - APPLY COLOR THEORY
- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - APPLY BASIC DRAWING TECHNIQUES
- K - APPLY LAYOUT PRINCIPLES

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F188	4.38	57	59	52	48	3.37	18
F191	2.52	19	20	23	15	3.89	7
F193	2.65	43	31	31	28	2.62	5
F194	3.07	48	50	43	34	2.43	8
F195	4.10	76	69	64	57	2.35	13
F196	3.88	57	49	47	36	2.63	10
F205	4.60	71	60	55	44	3.70	18
F206	3.90	38	25	22	28	3.84	11
F210	4.77	71	62	63	58	4.17	18
F214	5.17	71	81	80	66	3.82	18
F237	3.92	14	23	26	26	4.29	11
F241	5.17	81	81	78	75	4.21	18
F245	2.10	5	4	4	3	7.14	2
F246	2.00	5	4	5	7	6.70	2
F249	3.57	33	37	38	32	4.24	15
F250	2.77	62	52	47	46	2.69	8
F251	4.00	76	72	67	57	2.89	13
F252	3.07	62	49	46	38	2.68	5
P393	4.72	57	58	56	52	6.05	18
P394	3.92	29	32	31	23	6.44	12
P399	5.07	29	40	43	41	6.09	12
P402	4.90	57	56	54	36	5.03	18
P403	3.27	10	20	18	7	5.07	7
P407	5.57	57	65	64	50	5.15	18
P408	2.97	14	23	18	15	5.74	7
P409	3.38	14	23	22	11	5.53	7
P410	5.63	33	50	52	42	4.85	18
P411	5.02	29	41	45	42	4.58	12
P412	5.80	52	63	61	46	5.14	18
P413	5.57	33	42	40	42	4.87	12
P414	6.02	67	63	60	50	4.77	18
P415	5.42	38	35	36	36	5.38	12

TASK NUMBER: 00004 (CONTINUED)

USAF JOB INVENTORY TASK STATEMENTS:

F188 Apply shading sheets or Scotch-Cal films to graphic products  
F191 Clean airbrush parts  
F193 Clean mechanical lettering templates  
F194 Clean paint brushes  
F195 Clean pens with ultrasonic cleaners  
F196 Clean pens, other than with ultrasonic cleaners  
F205 Develop Diazo materials, other than for viewgraphs  
F206 Develop Scotch-Cal films  
F210 Draw pencil guidelines  
F214 Ink lines on graphics  
F237 Produce sepia line intermediate masters  
F241 Proofread final graphics  
F245 Retouch photographs using airbrushes  
F246 Retouch photographs using retouch grays  
F249 Set type on typesetter machines  
F250 Spray finished artwork with fixatives  
F251 Tape lines on graphics  
F252 Tape protective covers on finished graphics  
P393 Create graphics using 2-D graphics programs  
P394 Create graphics using 3-D graphics programs  
P399 Digitize artwork using digitizing tablets  
P402 Letter certificates using laser printers  
P403 Letter certificates using plotters  
P407 Operate 35mm film recorders  
P408 Prepare automated visual displays  
P409 Produce charts using plotters  
P410 Produce color paper hardcopies of visual images  
P411 Produce monochrome paper hardcopies of visual images  
P412 Produce slides using 35mm recorders  
P413 Produce viewgraphs using color thermal printers  
P414 Produce viewgraphs using laser printers  
P415 Scan artwork using optical input devices



TASK NUMBER: 00005

TASK STATEMENT:

PERFORM OPERATOR'S MAINTENANCE ON DIAZO MACHINE

TASK NOTE:

SPACECOM - CONTRACTED OUT TO BE ACCOMPLISHED ON A QUARTERLY BASIS.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) <u>Course</u>	(2) <u>CDC</u>	(3) <u>OJT</u>	(1) <u>Course</u>	(2) <u>CDC</u>	(3) <u>OJT</u>	(1) <u>Course</u>	(2) <u>CDC</u>	(3) <u>OJT</u>
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

DIAZO MACHINE, GLASS CLEANER, TOWELS, RAZOR BLADES, CARBON FILTER,  
AMMONIA, CHEESE CLOTH, SUN GLASSES, PROTECTIVE CLOTHING

REFERENCES:

MANUFACTURER'S MANUAL; SOP; STP-11-25Q13-SM-TG

CONDITION:

WELL-VENTILATED AREA

CUES:

MARKS OR FAULTS IN PRODUCTS  
SCHEDULED MAINTENANCE AS REQUIRED BY REFERENCES

JOB STANDARDS:

IAW REFERENCES

TASK NUMBER: 00005 (CONTINUED)

ACTIVITIES:

- A - REMOVE FRONT HOUSING
- A - RUN MACHINE LIGHTS ON LOW INTENSITY
- A - CLEAN DIAZO MACHINE GLASS CYLINDERS (F192)
- A - REMOVE REMAINING SPOTS THAT THE GLASS CLEANER DIDN'T REMOVE USING RAZOR BLADE
- A - INSERT CLOTH INTO EACH FLUORESCENT TUBE AND CLEAN THOROUGHLY
- A - REMOVE CARBON FILTER
- A - INSTALL PRESENT OR NEW FILTER AFTER CHECKING FOR DAMAGE
- A - REPLACE RETAINING BRACKET
- A - REMOVE AMMONIA BOTTLE FROM BACK OF PRINTER
- A - FILL AMMONIA BOTTLE FROM SUPPLY BOTTLE (F243)
- A - REPLACE CONTAINER AND RECONNECT TO MACHINE
- A - EMPTY RESIDUE BOTTLE

SKILLS:

- S - OPERATE DIAZO MACHINE
- S - USE SUNGLASSES
- S - USE PROTECTIVE CLOTHING

KNOWLEDGES:

- K - APPLY HAZARDOUS AND TOXIC WASTE DISPOSAL PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY SAFETY PROCEDURES
- K - APPLY PROPER DIAZO MACHINE CLEANING TECHNIQUES

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F192	4.85	52	62	60	45	3.08	18
F243	3.60	33	40	35	36	3.75	15

USAF JOB INVENTORY TASK STATEMENTS:

F192 Clean Diazo reproduction machine glass cylinders  
F243 Replenish developing systems for Diazo equipment

TASK NUMBER: 00006

TASK STATEMENT:

PRODUCE PAPER, FILM, AND CARDSTOCK DIAZO PRINTS

TASK NOTES:

SAFETY - PROTECTIVE CLOTHING, EYE WASH STATION, AND SINK MUST BE AVAILABLE DURING OPERATION. TO PREVENT FIRE, IDLE SPEED MUST BE LEFT ON AFTER OPERATION OF MACHINE.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) <u>Course</u>	(2) <u>CDC</u>	(3) <u>OJT</u>	(1) <u>Course</u>	(2) <u>CDC</u>	(3) <u>OJT</u>	(1) <u>Course</u>	(2) <u>CDC</u>	(3) <u>OJT</u>
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

DIAZO MACHINE, FILM MASTER, PAPER, FILM, CARDSTOCK, SCOTCH-CAL MATERIALS

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

WELL-VENTILATED AREA

CUES:

READY TO PRODUCE FINAL PRODUCT  
RECEIVE WORK ORDER

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

TASK NUMBER: 00006 (CONTINUED)

ACTIVITIES:

- A - TURN ON EQUIPMENT VENTS
- A - POWER UP MACHINE AND ALLOW FOR A 10- to 15-MINUTE WARM-UP
- A - CHECK WATER SUPPLY
- A - CHECK AMMONIA LEVELS
- A - SET MACHINE SPEED
- A - SET LIGHT SETTING
- A - SELECT REQUIRED MEDIA MATERIALS
- A - PREPARE MASTER AND FILM OR PAPER FOR PROCESS
- A - MAKE COPY
- A - PROOF COPY
- A - REPEAT PROCESS IF INTENSITY OF SHADE NEEDS TO BE INCREASED
- A - TURN OFF AMMONIA
- A - SET PRINTER SPEED TO IDLE

SKILL:

- S - OPERATE DIAZO MACHINE

KNOWLEDGES:

- K - APPLY HAZARDOUS AND TOXIC WASTE DISPOSAL PROCEDURES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F205	4.60	71	60	55	44	3.70	18
F206	3.90	38	25	22	28	3.84	11
F237	3.92	14	23	26	26	4.29	11
J305	6.02	71	73	66	56	4.20	18

USAF JOB INVENTORY TASK STATEMENTS:

- F205 Develop Diazo materials, other than for viewgraphs
- F206 Develop Scotch-Cal films
- F237 Produce sepia line intermediate masters
- J305 Produce viewgraph slides using the Diazo process

TASK NUMBER: 00007

TASK STATEMENT:

PRODUCE PRINTED TEXT WITH COMPUGRAPHIC LETTERING MACHINE

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUGRAPHIC LETTERING MACHINE, PRINTER, FILM

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

LACK OF SUPPLIES  
POWER OUTAGE

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUESTS

ACTIVITIES:

- A - ENSURE FILM IS LOADED
- A - TURN ON POWER TO COMPUGRAPHIC LETTERING MACHINE
- A - SELECT FORMAT AND PRINT SIZE
- A - SELECT LINE SPACING AND LETTER INTERVALS
- A - VIEW PRINTED MATERIAL ON SCREEN
- A - STORE AS REQUIRED
- A - AUTOMATICALLY EXPOSE PRINT MACHINE TO LIGHT-SENSITIVE PAPER

TASK NUMBER: 00007 (CONTINUED)

ACTIVITIES (CONTINUED):

- A - REMOVE CARTRIDGE FOR EXPOSING IN PRINTER
- A - LOAD FILM IN PRINTER
- A - CHECK CHEMICALS
- A - PRINT TEXT
- A - TAKE OUT FILM
- A - CLEAN PRINTER

SKILLS:

- S - OPERATE COMPUGRAPHIC LETTERING MACHINE
- S - OPERATE PRINTER
- S - TYPE ACCURATELY

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY HAZARDOUS AND TOXIC WASTE DISPOSAL PROCEDURES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - IDENTIFY LETTERING REQUIREMENTS

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F220	3.72	62	48	44	32	3.30	15
F230	3.13	33	25	22	21	4.71	7
F231	2.80	33	23	25	26	4.87	7
F241	5.17	81	81	78	75	4.21	18

USAF JOB INVENTORY TASK STATEMENTS:

- F220 Load photocomposing machines with film or paper
- F230 Perform operator maintenance on photocomposing machines
- F231 Perform operator maintenance on typesetting machines
- F241 Proofread final graphics

TASK NUMBER: 00008

TASK STATEMENT:

PREPARE GRAPHICS USING SPECIAL GRAPHIC EQUIPMENT

TASK NOTE:

THERMO-TRANSPARENCY IS NORMALLY USED BY CUSTOMERS FOR POOR BOY  
TRANSPARENCIES.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, POS (POSITIVE) COPY CAMERA, OPAQUE PROJECTOR, THERMO-  
TRANSPARENCY MAKER, ACETATE, FILM, PAPER, COPY PAPER, 35MM FILM, INK  
ROLLS, WAXER, COLOR IMAGING RIBBON, LASER PRINTER, TONER, FLAT BED  
SCANNER, 35MM FILM IMAGER, REFERENCE FILES

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

CAPABILITY OF COMPUTER SOFTWARE  
COMPUTER DOWN  
LACK OF SUPPLIES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

TASK NUMBER: 00008 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

COMPUTER

- A - FORMAT DISC
- A - LOAD 35MM FILM IMAGER
- A - CREATE BORDERS (IF NECESSARY)
- A - CREATE OR SCAN IMAGES
- A - PRINT IMAGES
- A - OBTAIN IMAGE APPROVAL BY CUSTOMER OR QA
- A - DOWNLOAD 35MM FILM IMAGER TO CASSETTE

POS COPY CAMERA

- A - DETERMINE SIZE OF REDUCTION OR ENLARGEMENT
- A - SET UP COPY BOARD FOR FILM OR PAPER
- A - CENTER PRODUCT
- A - SECURE COVER
- A - USE SCALE TO DETERMINE REDUCTION OR ENLARGEMENT
- A - TILT TABLE (COPY BOARD ON EDGE)
- A - SET CAMERA FOR FILM OR PAPER AND REDUCTION OR ENLARGEMENT
- A - PLACE PAPER OR FILM NEGATIVE IN GLASS COPY AREA
- A - EXPOSE MATERIAL
- A - REMOVE FROM UNDER GLASS
- A - RUN THROUGH PROCESSOR IF REQUIRED

PMT PROCESS

- A - PLACE OBJECT ON COPY BOARD
- A - PLACE NEGATIVE ABOVE CAMERA
- A - EXPOSE NEGATIVE TO OBJECTS
- A - PLACE NEGATIVE ON RECEIVER FILM OR PAPER
- A - PROCESS FINAL PRODUCT

TRANSPARENCY MAKER

- A - PLACE ACETATE OVER ORIGINAL
- A - SET EXPOSURE CONTROL DIAL
- A - FEED COPY SET THROUGH MACHINE (AUTOMATIC FEED)

OPAQUE PROJECTOR

- A - PLACE ART WORK INSIDE PROJECTOR
- A - PLACE TRANSFER MATERIAL IN FRONT OF PROJECTOR
- A - TURN ON PROJECTOR



TASK NUMBER: 00008 (CONTINUED)

ACTIVITIES (CONTINUED):

OPAQUE PROJECTOR (CONTINUED)

- A - DRAW REDUCED OR ENLARGED CHARTS OR MAPS (F211)
- A - REMOVE TRANSFER MATERIAL
- A - TURN OFF PROJECTOR

WAXER

- A - TURN ON MACHINE
- A - WAIT FOR MACHINE WARM-UP
- A - FEED MATERIAL FACE UP THROUGH MACHINE
- A - APPLY WAX TO BACK OF MATERIAL WITH ROLLER (HAND WAXER)
- A - REMOVE MATERIAL
- A - TURN OFF MACHINE

SKILLS:

- S - OPERATE COMPUTER
- S - OPERATE POS COPY CAMERA
- S - OPERATE LASER PRINTER
- S - OPERATE OPAQUE PROJECTOR
- S - OPERATE THERMO TRANSPARENCY MAKER
- S - OPERATE WAXER
- S - OPERATE 35MM FILM IMAGER
- S - USE FLAT BED SCANNER
- S - USE REFERENCE FILES

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY BASIC DRAWING TECHNIQUES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F184	4.97	95	88	86	76	2.84	13
F197	2.97	10	17	25	28	2.62	3
F211	4.47	43	52	56	52	4.37	18
F213	3.92	81	84	78	68	3.17	18

TASK NUMBER: 00008 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA (CONTINUED):

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F226	1.75	38	29	28	17	3.38	2
F227	3.02	71	50	54	43	3.51	17
F241	5.17	81	81	78	75	4.21	18
F242	2.88	0	11	19	26	3.68	7
J304	4.60	62	47	45	43	4.78	12
J306	4.40	52	38	42	37	3.52	12
J307	4.27	43	51	47	45	3.00	18
P388	2.35	24	16	15	12	6.05	7
P389	4.75	67	50	44	33	5.33	18
P390	4.25	5	24	30	28	5.86	11
P391	4.55	29	35	41	34	5.78	12
P392	4.63	14	26	35	36	5.33	11
P393	4.72	57	58	56	52	6.05	18
P394	3.92	29	32	31	23	6.44	12
P395	5.90	71	71	67	60	6.43	18
P396	3.38	19	19	20	21	6.03	7
P398	2.20	0	8	8	5	7.23	2
P399	5.07	29	40	43	41	6.09	12
P402	4.90	57	56	54	36	5.03	18
P403	3.27	10	20	18	7	5.07	7
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P406	2.60	10	16	17	15	5.68	7
P407	5.57	57	65	64	50	5.15	18
P408	2.97	14	23	18	15	5.74	7
P409	3.38	14	23	22	11	5.53	7
P410	5.63	33	50	52	42	4.85	18
P411	5.02	29	41	45	42	4.58	12
P412	5.80	52	63	61	46	5.14	18
P413	5.57	33	42	40	42	4.87	12
P414	6.02	67	63	60	50	4.77	18
P415	5.42	38	35	36	36	5.38	12
P416	2.45	10	13	14	11	6.39	7

USAF JOB INVENTORY TASK STATEMENTS:

F184 Adhere emblems, symbols, copy bodies, titles or drawings on graphics or masters  
 F197 Clean Thermofax belts  
 F211 Draw reduced or enlarged graphic products using projection devices  
 F213 Dry mount graphic products using adhesives  
 F226 Mount graphics using silicone sealers or glues  
 F227 Mount photos in matte boards  
 F241 Proofread final graphics

TASK NUMBER: 00008 (CONTINUED)

USAF JOB INVENTORY TASK STATEMENTS (CONTINUED):

F242 Remove or replace Thermofax belts  
J304 Produce viewgraph slides using photographic processes  
J306 Produce viewgraph slides using the electrostatic process  
J307 Produce viewgraph slides using Thermofax film  
P388 Build alphabet character sets or fonts  
P389 Camera capture artwork  
P390 Conduct operator maintenance of hardware  
P391 Convert graphic files from different users  
P392 Create electronic filing systems  
P393 Create graphics using 2-D graphics programs  
P394 Create graphics using 3-D graphics programs  
P395 Create new or original artwork using graphics imaging systems  
P396 Develop electronic color palettes  
P398 Develop video animation  
P399 Digitize artwork using digitizing tablets  
P402 Letter certificates using laser printers  
P403 Letter certificates using plotters  
P404 Maintain external backup files  
P405 Maintain internal system and external morgue files  
P406 Modify alphabet character sets or fonts  
P407 Operate 35mm film recorders  
P408 Prepare automated visual displays  
P409 Produce charts using plotters  
P410 Produce color paper hardcopies of visual images  
P411 Produce monochrome paper hardcopies of visual images  
P412 Produce slides using 35mm recorders  
P413 Produce viewgraphs using color thermal printers  
P414 Produce viewgraphs using laser printers  
P415 Scan artwork using optical input devices  
P416 Write automated command files

TASK NUMBER: 00009

TASK STATEMENT:

DESIGN FREEHAND LETTERING PRODUCTS

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

CALLIGRAPHY MARKERS, PENS, FELT TIP MARKERS, BRUSHES, LIGHT TABLE, LINE MASTER, PAPER, MATS, T-SQUARE, RULER, FLIP CHART PAPER, TEMPLATES, SQUARE, TAPE, NON-PHOTO BLUE PENCIL, PAINT, INK, PENCILS

REFERENCES:

COMMERCIAL PUBLICATIONS; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

SHORT SUSPENSES  
LACK OF SUPPLIES  
DIFFICULTY OF PRODUCT TO BE PRODUCED

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

A - TAPE PRELETTERED MASTER TO LIGHT TABLE FOR TRACING  
A - SECURE PAPER OR MAT TO SURFACE  
A - PRELETTER MATERIAL FOR CENTERING PURPOSES

TASK NUMBER: 00009 (CONTINUED)

ACTIVITIES (CONTINUED):

- A - TRACE LINE MASTER OR FREEHAND IN PENCIL
- A - SELECT MATERIAL FOR MASTER
- A - APPLY INK, PAINT, OR MARKER OVER PENCILED LETTERING
- A - PROOFREAD FINAL GRAPHICS FOR ACCURATE TEXT (F241)
- A - ERASE LAYOUT LINES (IF NON-PHOTO BLUE PENCIL NOT USED)

SKILLS:

- S - USE LIGHT TABLE
- S - USE CALLIGRAPHY MARKERS
- S - USE FELT TIP MARKERS
- S - USE BRUSHES
- S - USE PENS
- S - USE PAINTS

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY BASIC DRAWING TECHNIQUES
- K - APPLY LETTERING PRINCIPLES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - APPLY LAYOUT PRINCIPLES

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F194	3.07	48	50	43	34	2.43	8
F210	4.77	71	62	63	58	4.17	18
F214	5.17	71	81	80	66	3.82	18
F215	4.32	38	43	43	44	5.67	12
F216	3.63	19	18	22	21	6.30	7
F217	4.45	29	39	42	45	5.54	12
F223	2.25	24	18	20	17	4.18	2
F224	2.35	29	19	19	19	4.12	7
F235	4.40	52	48	42	40	4.97	12
F241	5.17	81	81	78	75	4.21	18
G257	3.45	33	33	30	27	4.82	15
H268	5.10	90	84	83	69	5.34	18
H270	3.52	71	71	65	56	4.25	17
H271	3.67	62	58	54	48	5.14	17
J303	2.88	14	16	16	19	3.57	7

TASK NUMBER: 00009 (CONTINUED)

USAF JOB INVENTORY TASK STATEMENTS:

- F194 Clean paint brushes
- F210 Draw pencil guidelines
- F214 Ink lines on graphics
- F215 Letter materials, such as charts, posters, plexiglass, or certificates, using freehand pen techniques
- F216 Letter materials, such as charts, posters, wood, plexiglass, or certificates, using brush lettering
- F217 Letter materials, such as charts, posters, wood, plexiglass, or certificates, using felt tip markers
- F223 Mix paints, other than watercolor, casein, or tempera paints
- F224 Mix watercolor, casein, or tempera paints
- F235 Produce preliminary sketches
- F241 Proofread final graphics
- G257 Produce flipcharts
- H268 Design layouts for certificates, awards, nameplates, or plaques
- H270 Produce cardstock place cards
- H271 Produce paper or parchment certificates or awards
- J303 Produce viewgraph slides using grease pencils or projectable markers

TASK NUMBER: 00010

TASK STATEMENT:

APPLY PREPARED LETTERING TO GRAPHICS PRODUCTS

TASK NOTES:

IMPROPERLY APPLIED PRESS-ON LETTERS MAY BE EASILY REMOVED WITH SCOTCH TAPE.

WORK SURFACE MUST BE CLEAN AND SMOOTH, BURNISHING TOOL MUST BE DULL.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

PRESS-ON LETTERS, ADHESIVE BACK VINYL LETTERING, BURNISHING TOOL, PENCIL, SCALE, STRAIGHT EDGE, CHART PAK TAPE, NON-PHOTO BLUE PENCILS, TRACING PAPER, LIGHT TABLE, KROY MACHINE, GRID SHEETS

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CUE:

RECEIVE WORK ORDER WITH LIMITED AMOUNT OF LETTERING TO BE ACCOMPLISHED

CONSTRAINTS:

SHORT SUSPENSES  
LACK OF SUPPLIES

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

TASK NUMBER: 00010 (CONTINUED)

ACTIVITIES:

PRESS-ON LETTERING

- A - CHECK FOR ADEQUATE SUPPLY OF LETTERING
- A - SELECT STYLE OF LETTERING AND TYPE: PRESS-ON OR VINYL
- A - LAYOUT AND SECURE MATERIAL ON WORK SURFACE OR LIGHT TABLE
- A - MAKE LIGHT GUIDELINES TO INCLUDE CENTER AND BASELINE WITH NON-PHOTO BLUE PENCIL
- A - DETERMINE SPACING AND LOCATION OF LETTERS
- A - POSITION PRESS-ON LETTERING ON SPACE TO BE APPLIED
- A - RUB ENTIRE LETTER USING BURNISHING TOOL OR DULL PENCIL
- A - LAY TRACING OVER LETTERING
- A - RUN RULER ACROSS TRACING PAPER TO SEAL LETTERING
- A - PROOFREAD FINAL GRAPHICS FOR ACCURATE TEXT (F241)

KROY MACHINE

- A - TYPE TEXT
- A - REMOVE BACKING FROM LETTERS
- A - PLACE LETTER AT DESIRED LOCATION
- A - PROOFREAD FINAL GRAPHICS FOR ACCURATE TEXT (F241)

SKILLS:

- S - OPERATE KROY MACHINE
- S - USE BURNISHING TOOL
- S - USE PREPARED LETTERING
- S - USE LIGHT TABLE

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY LAYOUT PRINCIPLES
- K - APPLY LETTERING PRINCIPLES
- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS



TASK NUMBER: 00010 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F187	4.17	67	62	55	48	3.29	18
F241	5.17	81	81	78	75	4.21	18
F249	3.57	33	37	38	32	4.24	15
H268	5.10	90	84	83	69	5.34	18
H271	3.67	62	58	54	48	5.14	17

USAF JOB INVENTORY TASK STATEMENTS:

F187 Apply pressure-sensitive or press-on lettering to graphic products, such as charts or Vu-graph masters  
F241 Proofread final graphics  
F249 Set type on typesetter machines  
H268 Design layouts for certificates, awards, nameplates, or plaques  
H271 Produce paper or parchment certificates or awards

TASK NUMBER: 00011

TASK STATEMENT:

PRODUCE GRAPHICS PRODUCTS WITH ELECTRICAL/MECHANICAL LETTERING DEVICES

TRAINING RECOMMENDATIONS:

A			B			C		
3-SKILL LEVEL			5-SKILL LEVEL			7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, COMPUGRAPHIC LETTERING MACHINE, KROY MACHINE, MERLIN MECHANICAL LETTERING MACHINE, LETTER-ON SYSTEM, MATTE FINISH, PRINTER, MAX CADLINER, REFERENCE FILES

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER REQUESTING, OTHER THAN HAND OR PRESS-ON LETTERING

CONSTRAINTS:

COMPUTER DOWN  
SHORT SUSPENSES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE  
CAPABILITY OF COMPUTER SOFTWARE

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

TASK NUMBER: 00011 (CONTINUED)

ACTIVITIES:

COMPUTER AND COMPUGRAPHIC LETTERING MACHINE

- A - SELECT DESIRED LETTERING PROGRAM
- A - TYPE DESIRED TEXT
- A - EDIT TEXT
- A - SAVE FINAL TO DISK (P405)
- A - PRINT TEXT

KROY

- A - TURN ON MACHINE
- A - LOAD APPROPRIATE TAPE CARTRIDGE AND THREAD RIBBON TO TAKE UP REEL
- A - CLOSE LID COVERING TAPE AND RIBBON
- A - INSTALL LETTER FONT/DISC
- A - SELECT LETTER REQUIRED, PRINT, SELECT NEXT LETTER

OR

- A - TURN ON MACHINE
- A - PUSH RESET TO STRAIGHTEN TAPE AND TAKE UP SLACK IN RIBBON
- A - TYPE DESIRED TEXT
- A - EDIT TEXT AND STORE IN MEMORY
- A - PRINT TEXT

LETTER-ON

- A - SELECT COLOR OF TAPE
- A - CHOOSE TEXT SIZE
- A - TURN ON MACHINE
- A - SELECT NUMBER/LETTER TEMPLATE
- A - INSERT TEMPLATE INTO MACHINE
- A - DEPRESS IMPACT KEY
- A - REMOVE TEMPLATE AND CHOOSE NEXT NUMBER/LETTER
- A - REPEAT STEPS

MERLIN MECHANICAL LETTERING MACHINE

- A - SELECT DESIRED DISC AND LOAD INTO MACHINE
- A - TURN ON MACHINE
- A - TYPE DESIRED TEXT
- A - EDIT AND STORE IN MEMORY
- A - USE SEQUENCE KEY FOR SEQUENCING LETTERS AND TEXT
- A - PRINT TEXT
- A - SPRAY WITH FIXATIVE

TASK NUMBER: 00011 (CONTINUED)

FOLLOWING ACTIVITIES PERTAIN TO ALL PRECEDING MACHINES

- A - CUT TAPE AT END OF TEXT
- A - TRIM EXCESS TAPE
- A - SEPARATE LETTERING
- A - SELECT MATERIAL LETTERS TO BE APPLIED ON
- A - APPLY LETTERING TO PRODUCT
- A - PROOFREAD FINAL GRAPHICS FOR ACCURATE TEXT (F241)

MAX CADLINER

- A - TYPE DESIRED TEXT
- A - SELECT LETTER STYLE
- A - LOAD STYLE INTO MACHINE
- A - SELECT LETTER SIZE
- A - POSITION DOCUMENT TO FLAT SURFACE
- A - ALIGN MACHINE TO PROPER DOCUMENT AREA TO BE PRINTED
- A - ATTACH PEN
- A - PRINT TEXT
- A - PROOFREAD FINAL GRAPHICS FOR ACCURATE TEXT (F241)

SKILLS:

- S - OPERATE COMPUTER
- S - OPERATE KROY MACHINE
- S - OPERATE LETTER-ON SYSTEM
- S - OPERATE MAX CADLINER
- S - OPERATE MERLIN MECHANICAL LETTERING MACHINE
- S - OPERATE PRINTER
- S - OPERATE COMPUGRAPHIC LETTERING MACHINE
- S - USE REFERENCE FILES

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY LETTERING PRINCIPLES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

TASK NUMBER: 00011 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F218	3.50	48	47	42	37	5.26	15
F219	2.88	29	32	28	19	5.03	15
F241	5.17	81	81	78	75	4.21	18
H268	5.10	90	84	83	69	5.34	18
H271	3.67	62	58	54	48	5.14	17
P402	4.90	57	56	54	36	5.03	18
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P410	5.63	33	50	52	42	4.85	18
P411	5.02	29	41	45	42	4.58	12
P413	5.57	33	42	40	42	4.87	12
P414	6.02	67	63	60	50	4.77	18

USAF JOB INVENTORY TASK STATEMENTS:

F218 Letter products, such as charts, posters, or certificates, using LeRoy mechanical lettering instruments

F219 Letter products, such as charts, posters, or certificates, using letter guide mechanical lettering sets

F241 Proofread final graphics

H268 Design layouts for certificates, awards, nameplates, or plaques

H271 Produce paper or parchment certificates or awards

P402 Letter certificates using laser printers

P404 Maintain external backup files

P405 Maintain internal system or external morgue files

P410 Produce color paper hardcopies of visual images

P411 Produce monochrome paper hardcopies of visual images

P413 Produce viewgraphs using color thermal printers

P414 Produce viewgraphs using laser printers

TASK NUMBER: 00012

TASK STATEMENT:

DRAW STILL-LIFE FIGURES AND OBJECTS

TRAINING RECOMMENDATIONS:

A			B			C		
3-SKILL LEVEL			5-SKILL LEVEL			7-SKILL LEVEL		
(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
<u>Course</u>	<u>CDC</u>	<u>OJT</u>	<u>Course</u>	<u>CDC</u>	<u>OJT</u>	<u>Course</u>	<u>CDC</u>	<u>OJT</u>
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, ILLUSTRATORS TOOLS AND SUPPLIES, LETTERING PENS, ILLUSTRATORS TABLE, COLOR PENCILS, CHARCOAL, CLIP ART, FELT TIP MARKERS, T-SQUARE, TRACING PAPER, PAINT, BRUSHES

REFERENCES:

AFR 205-1; AR 380-5; COMMERCIAL ART BOOKS; MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
SHORT SUSPENSES  
LACK OF SUPPLIES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE  
CAPABILITY OF COMPUTER SOFTWARE

TASK NUMBER: 00012 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

COMPUTER

- A - DETERMINE COLOR REQUIREMENTS
- A - PRODUCE GRAPHIC VISUAL ON COMPUTER SCREEN
- A - ADD HUE VALUES AND COLOR COMBINATIONS
- A - MODIFY INITIAL DRAFT AS REQUIRED
- A - SAVE FINAL TO DISC (P405)
- A - PRINT COPY FOR CUSTOMER PROOFING
- A - CHANGE AS REQUIRED BY CUSTOMER

MANUAL

- A - DETERMINE POSITION OF OBJECT
- A - ACQUIRE KNOWLEDGE OF OBJECT TO BE DRAWN
- A - LAYOUT PRELIMINARY ROUGH SKETCH (F236)
- A - ESTABLISH HORIZON LINE AND VANISHING POINT
- A - DETERMINE LINE WEIGHTS
- A - DRAW SKETCH
- A - INK IN SKETCH
- A - ADD COLOR OR CHARCOAL FOR SHADING AND CONTRAST
- A - ADD CROSS HATCH STITCHING OR STIPLING FOR SHADING
- A - ERASE ANY GUIDELINES AND STRAY MARKINGS

SKILLS:

- S - DRAW FIGURES AND OBJECTS
- S - OPERATE COMPUTER
- S - USE BRUSHES
- S - USE ILLUSTRATORS TOOLS AND SUPPLIES
- S - USE ILLUSTRATORS TABLE
- S - USE PAINTS
- S - USE FELT TIP MARKERS

KNOWLEDGES:

- K - APPLY BASIC DRAWING TECHNIQUES
- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

TASK NUMBER: 00012 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F194	3.07	48	50	43	34	2.43	8
F209	4.47	52	61	56	44	6.54	18
F212	4.30	33	46	49	41	6.51	12
F236	4.57	52	53	47	40	4.63	18
F238	3.82	48	41	39	32	4.29	12
M338	3.22	43	38	34	20	5.14	15
M339	2.50	38	33	29	18	6.17	15
P392	4.63	14	26	35	36	5.33	11
P395	5.90	71	71	67	60	6.43	18
P398	2.20	0	8	8	5	7.23	2
P399	5.07	29	40	43	41	6.09	12
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P408	2.97	14	23	18	15	5.74	7

USAF JOB INVENTORY TASK STATEMENTS:

F194 Clean paint brushes  
 F209 Draw freehand illustrations, such as cartoons, landscapes, or still life drawings  
 F212 Draw technical illustrations, other than medical illustrations  
 F236 Produce rough sketches  
 F238 Produce thumbnail sketches  
 M338 Construct plane geometric figures  
 M339 Draw figures using linear perspective  
 P392 Create electronic filing systems  
 P395 Create new or original artwork using graphics imaging systems  
 P398 Develop video animation  
 P399 Digitize artwork using digitizing tablets  
 P404 Maintain external backup files  
 P405 Maintain internal system or external morgue files  
 P408 Prepare automated visual displays



TASK NUMBER: 00013

TASK STATEMENT:

MIX COLORS AND HUES

TRAINING RECOMMENDATIONS:

A			B			C		
3-SKILL LEVEL			5-SKILL LEVEL			7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, PAINTS, INKS, CHALKS, COLOR CHARTS, PALETTE, EASEL, BRUSHES

REFERENCES:

COLOR PALETTES GUIDE; MANUFACTURER'S MANUAL; NAVEDTRA 10472; PANTONE COLOR CHIP BOOK; SOI; SOP; STP-11-25Q13-SM-TG

CONDITIONS:

GOOD LIGHTING AND A CLEAN, DRY, AND WELL-VENTILATED AREA  
TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

TASK NUMBER: 00013 (CONTINUED)

ACTIVITIES:

COMPUTER

- A - CALL UP COLOR SCREEN USING PALETTE PROGRAM
- A - SELECT APPROPRIATE COLOR NUMBER TO MODIFY
- A - MANIPULATE AMOUNTS OF RED, GREEN, OR BLUE LIGHT TO ACHIEVE RESULTS
- A - SAVE COLOR PALETTE TO DISC
- A - DISPLAY FINAL ARTWORK USING MODIFIED COLOR PALETTE TO VERIFY DESIRED RESULTS
- A - MODIFY COLORS AS REQUIRED

MANUAL

- A - SET UP MIX FOR COLORS TO BE MIXED
- A - REVIEW CHART FOR COLOR MIX
- A - DETERMINE WHICH HUES AND VALUES REQUIRE MIXING (BY TRIAL AND ERROR)
- A - APPLY COLOR TO TEST BOARD AND ALLOW TO DRY
- A - COMPARE TEST BOARD TO REQUESTED COLOR SAMPLE
- A - ADD APPROPRIATE COLOR TO LIGHTEN OR DARKEN AS REQUIRED

SKILLS:

- S - OPERATE COMPUTER
- S - USE BRUSHES
- S - USE COLOR CHARTS
- S - USE PAINTS
- S - USE INKS
- S - USE CHALKS

KNOWLEDGES:

- K - APPLY COLOR THEORY
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - APPLY HAZARDOUS AND TOXIC WASTE DISPOSAL PROCEDURES

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F194	3.07	48	50	43	34	2.43	8
F204	5.90	67	75	73	62	4.47	18
F223	2.25	24	18	20	17	4.18	2
F224	2.35	29	19	19	19	4.12	7
P392	4.63	14	26	35	36	5.33	11

TASK NUMBER: 00013 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA (CONTINUED):

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
P396	3.38	19	19	20	21	6.03	7
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18

USAF JOB INVENTORY TASK STATEMENTS:

F194 Clean paint brushes  
F204 Determine color schemes for graphics  
F223 Mix paints, other than watercolor, casein, or tempera paints  
F224 Mix watercolor, casein, or tempera paints  
P392 Create electronic filing systems  
P396 Develop electronic color palettes  
P404 Maintain external backup files  
P405 Maintain internal system or external morgue files

TASK NUMBER: 00014

TASK STATEMENT:

PREPARE DRAWING MEDIA

TASK NOTE:

THE VI LIBRARY HAS VIDEO TAPES AVAILABLE FOR TEACHING AIR BRUSH TECHNIQUES. THIS IS ESPECIALLY USEFUL WHEN TEACHING DIRECT DUTY ASSIGNEES.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, PAPER OR BOARD, AIR AND PAINT BRUSHES, ILLUSTRATORS TOOLS AND SUPPLIES, RUBBER CEMENT, PRINTER, REFERENCE FILES, PAINTS, INKS, CHALKS

REFERENCES:

AFR 700-32, VOL II; COMMERCIAL PUBLICATIONS; MANUFACTURER'S MANUAL;  
NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
SHORT SUSPENSES

TASK NUMBER: 00014 (CONTINUED)

CONSTRAINTS (CONTINUED):

LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE  
CAPABILITY OF COMPUTER SOFTWARE

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

COMPUTER

- A - RETRIEVE GRAPHICS PROGRAM FROM FILES, IF AVAILABLE
- A - SET UP PARAMETERS
- A - DRAFT ILLUSTRATION
- A - MAKE COPY FOR CUSTOMER APPROVAL
- A - APPLY FINISHING TOUCH TO ILLUSTRATION
- A - SAVE FINAL TO DISC (P405)
- A - PRINT AND REVIEW FINISHED COPY

MANUAL

- A - SELECT MEDIA (PAPER OR BOARD)
- A - SET UP WORK AREA
- A - DRAFT ILLUSTRATION IN PENCIL
- A - MAKE PHOTO COPY OF DRAFT FOR CUSTOMER APPROVAL
- A - APPLY SHADING
- A - MASK OUT AREA NOT TO BE PAINTED
- A - APPLY FINISHING MATERIAL (PAINT, INK, COLOR PENCIL)
- A - ERASE PENCIL MARKINGS AND STRAY LINES
- A - PROOFREAD FINISHED PRODUCT

SKILLS:

- S - OPERATE COMPUTER
- S - OPERATE PRINTER
- S - USE AIR AND PAINT BRUSHES
- S - USE ILLUSTRATORS TOOLS AND SUPPLIES
- S - USE PAINTS
- S - USE INKS
- S - USE CHALKS
- S - USE REFERENCE FILES

TASK NUMBER: 00014 (CONTINUED)

KNOWLEDGES:

- K - APPLY COLOR THEORY
- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY BASIC DRAWING TECHNIQUES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F191	2.52	19	20	23	15	3.89	7
F194	3.07	48	50	43	34	2.43	8
F223	2.25	24	18	20	17	4.18	2
F224	2.35	29	19	19	19	4.12	7
F235	4.40	52	48	42	40	4.97	12
F241	5.17	81	81	78	75	4.21	18
H268	5.10	90	84	83	69	5.34	18
P389	4.75	67	50	44	33	5.33	18
P391	4.55	29	35	41	34	5.78	12
P392	4.63	14	26	35	36	5.33	11
P399	5.07	29	40	43	41	6.09	12
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18

USAF JOB INVENTORY TASK STATEMENTS:

- F191 Clean airbrush parts
- F194 Clean paint brushes
- F223 Mix paints, other than watercolor, casein, or tempera paints
- F224 Mix watercolor, casein, or tempera paints
- F235 Produce preliminary sketches
- F241 Proofread final graphics
- H268 Design layouts for certificates, awards, nameplates, or plaques
- P389 Camera capture artwork
- P391 Convert graphic files from different users
- P392 Create electronic filing systems
- P399 Digitize artwork using digitizing tablets
- P404 Maintain external backup files
- P405 Maintain internal system or external morgue files

TASK NUMBER: 00015

TASK STATEMENT:

MAINTAIN COMPLETED GRAPHICS PRODUCTS

TASK NOTE:

ALL CLASSIFIED MATERIALS ARE RETURNED TO CUSTOMER AT END OF DAY, EXCEPT WHERE CLASSIFIED STORAGE IS AVAILABLE.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, FILING CABINET, STORAGE BINS, FILM NEGATIVE PLATES, REFERENCE FILES

REFERENCES:

AFR 205-1; AR 380-5; DODD 5200.1R; MANUFACTURER'S MANUAL; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

GRAPHICS PROJECT HAS BEEN COMPLETED

CONSTRAINTS:

COMPUTER DOWN  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

TASK NUMBER: 00015 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES

ACTIVITIES:

- A - REVIEW MORGUE FILES FOR SIMILAR PRODUCT
- A - COMPARE PREVIOUS PRODUCT WITH CURRENT REQUIREMENT
- A - SAVE NEW PRODUCT ON FLOPPY DISC OR IN CATEGORY/ORGANIZATION FILE (P405)
- A - ASSIGN SEQUENTIAL/REFERENCE NUMBER
- A - DISMANTLE OR STORE REUSABLE DISPLAY MATERIALS OR EQUIPMENT (F208)

SKILLS:

- S - OPERATE COMPUTER
- S - USE REFERENCE FILES

KNOWLEDGES:

- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F208	1.92	24	25	25	19	3.83	2
F221	4.25	67	68	76	68	3.68	18
F248	3.80	52	65	62	64	3.89	18
P392	4.63	14	26	35	36	5.33	11
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18

USAF JOB INVENTORY TASK STATEMENTS:

- F208 Dismantle or store reusable display materials or equipment
- F221 Maintain completed artwork or masters files
- F248 Select graphics from illustration morgues
- P392 Create electronic filing systems
- P404 Maintain external backup files
- P405 Maintain internal system or external morgue files



TASK NUMBER: 00016

TASK STATEMENT:

PREPARE VIEWGRAPH SLIDES

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, PRINTER, PLOTTER, ACETATE, 35 MM FILM, DIAZO MACHINE, TRACING PAPER, LIGHT TABLE, TAPE, DIAZO FILM, COPY MACHINE, COMPUGRAPHIC LETTERING MACHINE, REFERENCE FILES

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
CAPABILITY OF COMPUTER SOFTWARE  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

TASK NUMBER: 00016 (CONTINUED)

ACTIVITIES:

COMPUTER AND COMPUGRAPHIC LETTERING MACHINE

- A - SELECT GRAPHICS PROGRAM SOFTWARE
- A - PRODUCE VIEWGRAPHS ON MONITOR
- A - IDENTIFY (NUMBER) INDIVIDUAL VIEWGRAPHS
- A - SAVE FINAL TO DISC (P405)
- A - PRINT HARD COPIES FOR PROOFING
- A - MAKE CORRECTIONS AS REQUIRED
- A - PRINT VIEWGRAPHS
- A - MOUNT OVERLAYS AND VIEWGRAPHS ON FRAMES

MANUAL

- A - TAPE ACETATE TO LIGHT TABLE
- A - ARRANGE LAYOUT AS REQUIRED (J299)
- A - TURN ON DIAZO PRINTER
- A - SELECT RUNNING SPEED
- A - OPEN AMMONIA VALVE
- A - EXPOSE DIAZO FILM
- A - MOUNT OVERLAYS AND VIEWGRAPHS ONTO FRAMES

MANUAL - FIELD

- A - PREPARE TEXT FOR MASTER
- A - APPLY LETTERING
- A - TAKE PHOTO COPY USING COPY MACHINE
- A - PREPARE BLACK BACKGROUND AND LIGHT LETTERING (J245)
- A - SEND TO PRINT SHOP FOR SHOOTING ON POSITIVE OR NEGATIVE
- A - RECEIVE FROM PRINT SHOP
- A - APPLY COLOR LETTERING WHEN REQUIRED
- A - PLACE CLEAR ACETATE ON TOP FOR POOR BOY
- A - MOUNT OVERLAYS AND VIEWGRAPHS ONTO FRAMES

SKILLS:

- S - OPERATE PLOTTER
- S - OPERATE COMPUTER
- S - OPERATE DIAZO MACHINE
- S - OPERATE PRINTER
- S - OPERATE COPY MACHINE
- S - USE LIGHT TABLE
- S - OPERATE COMPUGRAPHIC LETTERING MACHINE
- S - USE REFERENCE FILES

TASK NUMBER: 00016 (CONTINUED)

KNOWLEDGES:

- K - APPLY HAZARDOUS AND TOXIC WASTE DISPOSAL PROCEDURES
- K - APPLY LETTERING PRINCIPLES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - APPLY LAYOUT PRINCIPLES

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
A23	2.82	33	30	41	50	5.57	15
F240	2.52	29	22	24	18	4.25	7
F241	5.17	81	81	78	75	4.21	18
J296	4.57	76	80	66	61	2.46	13
J297	5.85	76	81	77	72	4.05	18
J298	3.72	67	42	40	43	3.07	15
J299	5.95	100	82	78	74	4.56	18
J301	6.25	81	77	73	63	4.34	18
J302	5.02	52	47	51	44	4.95	12
J303	2.88	14	16	16	19	3.57	7
J304	4.60	62	47	45	43	4.78	12
J305	6.02	71	73	66	56	4.20	18
J306	4.40	52	38	42	37	3.52	12
J307	4.27	43	51	47	45	3.00	18
J308	4.52	43	42	38	35	4.33	12
P392	4.63	14	26	35	36	5.33	11
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P410	5.63	33	50	52	42	4.85	18
P413	5.57	33	42	40	42	4.87	12
P414	6.02	67	63	60	50	4.77	18

USAF JOB INVENTORY TASK STATEMENTS:

- A23 Plan or prepare briefings
- F240 Produce typewritten masters or printing inserts
- F241 Proofread final graphics
- J296 Clean viewgraph slides
- J297 Coordinate format preparations for viewgraph slide masters with customers
- J298 Cut or trim negative film for mounting
- J299 Design viewgraph slide layouts
- J301 Produce viewgraph slide overlay masters

TASK NUMBER: 00016 (CONTINUED)

USAF JOB INVENTORY TASK STATEMENTS (CONTINUED):

- J302 Produce viewgraph slide reversal films
- J303 Produce viewgraph slides using grease pencils or projectable markers
- J304 Produce viewgraph slides using photographic processes
- J305 Produce viewgraph slides using the Diazo process
- J306 Produce viewgraph slides using the electrostatic process
- J307 Produce viewgraph slides using Thermofax film
- J308 Splice transparencies into viewgraph slides
- P392 Create electronic filing systems
- P404 Maintain external backup files
- P405 Maintain internal system or external morgue files
- P410 Produce color paper hardcopies of visual images
- P413 Produce viewgraphs using color thermal printers
- P414 Produce viewgraphs using laser printers

TASK NUMBER: 00017

TASK STATEMENT:

PREPARE AND PRODUCE ARTWORK FOR 35MM SLIDES

TRAINING RECOMMENDATIONS:

A			B			C		
3-SKILL LEVEL			5-SKILL LEVEL			7-SKILL LEVEL		
(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
<u>Course</u>	<u>CDC</u>	<u>OJT</u>	<u>Course</u>	<u>CDC</u>	<u>OJT</u>	<u>Course</u>	<u>CDC</u>	<u>OJT</u>
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, ILLUSTRATORS TOOLS AND SUPPLIES, CAMERA, PARAPAQUE, COPY CAMERA, COPY CAMERA STAND, SCALING WHEEL, 35MM FILM RECORDER, PRINTER, ILLUSTRATORS TABLE, REFERENCE FILES

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG; 35MM FORMAT GUIDE

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

TASK NUMBER: 00017 (CONTINUED)

ACTIVITIES:

COMPUTER

- A - RETRIEVE GRAPHICS PROGRAM FROM FILES, IF AVAILABLE
- A - ADJUST IMAGE FEATURES TO REQUIREMENTS
- A - SCALE UP OR DOWN FOR DESIRED SIZE (F247)
- A - REDISPLAY NEW SIZE AND FEATURES ON MONITOR
- A - HAVE CUSTOMER PROOF AND APPROVE DRAFT
- A - CORRECT AS REQUIRED
- A - SAVE FINAL TO DISC (P405)
- A - SEND IMAGE TO CAMERA FOR 35MM IMAGE
- A - PRODUCE SLIDES USING 35MM RECORDER (P412)
- A - MOUNT FINISHED SLIDES (K315)

MANUAL

- A - DETERMINE SIZE OF DRAWING USING SCALING WHEEL
- A - ENSURE DRAWING IS IN FORMAT SIZE
- A - PREPARE THUMBNAIL SKETCHES (F238)
- A - ROUGH SKETCH STUDY (F236)
- A - PERFORM COLOR STUDY
- A - PREPARE BLACK IMAGE PORTION WITH PARAPAQUE
- A - PREPARE FINISHED LAYOUT
- A - SHOOT FINISHED LAYOUT WITH COPY CAMERA OR COPY STAND
- A - MOUNT FINISHED SLIDES (K315)

SKILLS:

- S - OPERATE CAMERA
- S - OPERATE COMPUTER
- S - OPERATE COPY CAMERA
- S - OPERATE PRINTER
- S - OPERATE 35MM FILM RECORDER (P407)
- S - USE COPY CAMERA STAND
- S - USE ILLUSTRATORS TOOLS AND SUPPLIES
- S - USE ILLUSTRATORS TABLE
- S - USE SCALING WHEEL
- S - USE PARAPAQUE
- S - USE REFERENCE FILES

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY HAZARDOUS AND TOXIC WASTE DISPOSAL PROCEDURES
- K - APPLY BASIC DRAWING TECHNIQUES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY SAFETY PROCEDURES

TASK NUMBER: 00017 (CONTINUED)

KNOWLEDGES (CONTINUED):

K - APPLY TECHNICAL DATA  
K - APPLY WORK ORDER REQUIREMENTS  
K - IDENTIFY 35MM FORMAT

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
A23	2.82	33	30	41	50	5.57	15
E152	4.32	5	29	42	60	4.47	11
F228	3.15	33	42	33	32	3.54	15
F233	3.57	24	27	31	36	5.83	7
F236	4.57	52	53	47	40	4.63	18
F238	3.82	48	41	39	32	4.29	12
F244	2.70	52	35	25	23	4.79	15
F247	4.15	62	42	44	38	5.01	12
K309	.97	10	4	3	4	4.85	2
K310	2.17	14	15	18	13	4.19	2
K311	3.13	43	57	54	48	3.97	17
K313	2.52	19	20	20	15	5.57	7
K314	1.35	5	4	5	7	5.65	2
K315	2.55	33	37	34	28	3.43	15
K316	4.85	29	41	39	42	5.35	12
K317	2.90	33	27	21	24	4.25	7
K318	3.92	48	39	38	30	5.28	12
K319	4.15	57	55	51	40	5.09	18
K320	2.30	19	8	9	7	4.94	2
K321	3.22	38	54	53	41	3.86	17
P392	4.63	14	26	35	36	5.33	11
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P407	5.57	57	65	64	50	5.15	18
P410	5.63	33	50	52	42	4.85	18
P412	5.80	52	63	61	46	5.14	18

USAF JOB INVENTORY TASK STATEMENTS:

A23 Plan or prepare briefings  
E152 Coordinate graphics support with other agencies  
F228 Participate in precious metals recovery program  
F233 Produce comprehensives  
F236 Produce rough sketches  
F238 Produce thumbnail sketches  
F244 Retouch intermediate positives or negatives  
F247 Scale graphics products using mechanical aids, such as scalers or proportional dividers

TASK NUMBER: 00017 (CONTINUED)

USAF JOB INVENTORY TASK STATEMENTS (CONTINUED):

- K309 Arrange ceramic letters on 35mm layouts
- K310 Coordinate 35mm slide format preparation with typists
- K311 Coordinate 35mm slide processing or mounting services with photo labs
- K313 Develop film for 35mm slides
- K314 Dye or apply color to 35mm slides
- K315 Mount 35mm slides
- K316 Plan 35mm illustration layouts
- K317 Position 35mm copy
- K318 Prepare props, such as charts, emblems, drawings, or overlays for 35mm slides
- K319 Prepare 35mm masters
- K320 Prepare 35mm negatives for diazochrome reproduction
- K321 Review 35mm slides
- P392 Create electronic filing systems
- P404 Maintain external backup files
- P405 Maintain internal system or external morgue files
- P407 Operate 35mm film recorders
- P410 Produce color paper hardcopies of visual images
- P412 Produce slides using 35mm recorders



TASK NUMBER: 00018

TASK STATEMENT:

CONSTRUCT CHARTS AND GRAPHS

TASK NOTE:

GRAPHS AND CHARTS CAN BE COMPUTER-GENERATED IF SIZE ISN'T TOO LARGE.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, T-SQUARE, ILLUSTRATORS TOOLS AND SUPPLIES, FRENCH CURVE, GRAPH PAPER, KROY MACHINE, LIGHT TABLE, FELT TIP MARKERS, COPY MACHINE, FLIP CHART PAPER, TEMPLATES (MILITARY INSIGNIA, PRINTER, LINE-TAP), COMPUGRAPHIC LETTERING MACHINE, ILLUSTRATORS TABLE

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

TASK NUMBER: 00018 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

COMPUTER

- A - RETRIEVE GRAPHICS PROGRAM FROM FILES, IF AVAILABLE
- A - LAYOUT GRID ON COMPUTER
- A - DRAW PARAMETERS
- A - DESIGN CHART OR GRAPH USING PALETTE AND MOUSE
- A - SET REQUIRED TYPE
- A - PROOFREAD TEXT (F241)
- A - ADD COLOR FOR DESIRED EFFECT
- A - SAVE FINAL TO DISC (P405)
- A - SEND PRODUCT TO CAMERA OR PRINTER

MANUAL

- A - DETERMINE SIZE OF CHART OR GRAPH
- A - DETERMINE NUMBER OF LINES
- A - TAPE GRAPH PAPER AND THE VELUM TO LIGHT TABLE
- A - DRAW LINES USING FRENCH CURVE, T-SQUARE, TRIANGLE, ETC.
- A - BORDER OUT DESIRED BOUNDARIES WITH CHART-PAK TAPE
- A - APPLY LETTERING FROM KROY OR COMPUGRAPHIC LETTERING MACHINE, OR PRESS  
ON LETTERING SHEETS (TASK 00010)
- A - PROOFREAD TEXT (F241)

OR

- A - PLACE GUIDE SHEET ON BACK OF CHART PAPER
- A - SKETCH ROUGH DRAFT ON FLIP CHART (G257)
- A - PROOFREAD TEXT (F241)
- A - DRAW OR LETTER FINAL PRODUCT (TASK 03009)

SKILLS:

- S - OPERATE COMPUTER
- S - OPERATE COMPUGRAPHIC LETTERING MACHINE
- S - OPERATE COPY MACHINE
- S - OPERATE KROY MACHINE
- S - OPERATE PRINTER
- S - USE BASIC DRAWING TECHNIQUES
- S - USE ILLUSTRATORS TOOLS AND SUPPLIES
- S - USE ILLUSTRATORS TABLE
- S - USE LIGHT TABLE

TASK NUMBER: 00018 (CONTINUED)

KNOWLEDGES:

- K - APPLY BASIC DRAWING TECHNIQUES
- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
A9	2.17	48	38	45	44	4.30	14
A23	2.82	33	30	41	50	5.57	15
F189	6.50	86	90	87	77	4.60	18
F241	5.17	81	81	78	75	4.21	18
G254	5.97	71	84	84	70	4.62	18
G255	5.17	86	77	72	60	4.45	18
G256	4.77	76	62	56	46	4.65	18
G257	3.45	33	33	30	27	4.82	15
G258	3.20	43	27	27	29	4.87	7
G259	4.52	67	64	61	50	4.57	18
G260	1.82	19	18	18	15	5.18	2
G261	5.05	81	77	76	62	4.67	18
G262	4.35	52	56	57	50	4.79	18
G263	2.15	14	6	7	6	5.57	2
G264	1.70	5	5	4	3	5.46	2
G265	2.75	24	21	30	30	4.95	7
G266	2.07	14	5	7	9	5.09	2
G267	1.32	14	4	5	7	5.42	2
P392	4.63	14	26	35	36	5.33	11
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P409	3.38	14	23	22	11	5.53	7
P410	5.63	33	50	52	42	4.85	18

USAF JOB INVENTORY TASK STATEMENTS:

- A9 Develop organizational or functional charts
- A23 Plan or prepare briefings
- F189 Arrange layouts for posters, signs, or publication masters
- F241 Proofread final graphics
- G254 Arrange layouts for charts or graphs
- G255 Produce bar graphs
- G256 Produce data flow charts
- G257 Produce flipcharts

TASK NUMBER: 00018 (CONTINUED)

USAF JOB INVENTORY TASK STATEMENTS (CONTINUED):

- G258 Produce graduated graphs
- G259 Produce line graphs
- G260 Produce mathematic subject graphs
- G261 Produce organizational charts
- G262 Produce pie charts
- G263 Produce polar grid charts
- G264 Produce polarized charts
- G265 Produce tabular charts
- G266 Produce triangular charts
- G267 Produce trilinear graphs
- P392 Create electronic filing systems
- P404 Maintain external backup files
- P405 Maintain internal system or external morgue files
- P409 Produce charts using plotters
- P410 Produce color paper hardcopies of visual images

TASK NUMBER: 00019

TASK STATEMENT:

PREPARE ARTWORK

TRAINING RECOMMENDATIONS:

A			B			C		
3-SKILL LEVEL			5-SKILL LEVEL			7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, ILLUSTRATORS TOOLS AND SUPPLIES, COPY MACHINE, DIAZO MACHINE, AF FORM 833, DD FORM 844, DA FORM 833, DA FORM 843, KROY LETTERING MACHINE, MATTE AND CLEAR ACETATE, CHART PAK LETTERING, PRINTER, COMPUGRAPHIC LETTERING MACHINE, REFERENCE FILES

REFERENCES:

AFR 6-1; MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP;  
STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE  
CAPABILITY OF COMPUTER SOFTWARE

TASK NUMBER: 00019 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

COMPUTER AND COMPUGRAPHIC LETTERING MACHINE

- A - DETERMINE SIZE OF ORIGINAL ARTWORK FOR ENLARGEMENT OR REDUCTION
- A - REVIEW INFORMATION MANAGER'S PRINT REQUIREMENTS
- A - FORMAT TO REQUIRED STYLE AND SIZE
- A - REVIEW DRAFT WITH CUSTOMER, AND CHANGE IF REQUIRED
- A - COMPLETE ALL MASTERS IN SUITABLE DESIGN
- A - SAVE FINAL TO DISC (P405)
- A - PRINT REPRODUCTION COPY

MANUAL

- A - DETERMINE SIZE OF ORIGINAL ARTWORK FOR ENLARGEMENT OR REDUCTION
- A - REVIEW INFORMATION MANAGER'S PRINT REQUIREMENTS
- A - PENCIL IN ROUGH DRAFT
- A - MAKE COPY ON COPY MACHINE
- A - REVIEW DRAFT WITH CUSTOMER, AND CHANGE IF REQUIRED
- A - COMPLETE ALL MASTERS IN SUITABLE DESIGN
- A - APPLY PREPARED LETTERING (TASK 00010)
- A - FORWARD TO REPRODUCTION CENTER IF EXTRA COPIES ARE NEEDED

SKILLS:

- S - OPERATE COMPUTER
- S - OPERATE DIAZO MACHINE
- S - OPERATE KROY MACHINE
- S - OPERATE PRINTER
- S - OPERATE COMPUGRAPHIC LETTERING MACHINE
- S - OPERATE COPY MACHINE
- S - USE ILLUSTRATORS TOOLS AND SUPPLIES
- S - USE PREPARED LETTERING
- S - USE REFERENCE FILES

KNOWLEDGES:

- K - ANNOTATE FORMS
- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY LAYOUT PRINCIPLES
- K - APPLY LETTERING PRINCIPLES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY BASIC DRAWING TECHNIQUES

TASK NUMBER: 00019 (CONTINUED)

KNOWLEDGES:

- K - APPLY SAFETY PROCEDURES
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
E137	5.25	24	45	51	60	3.24	12
E145	5.72	19	52	53	57	3.29	18
E164	5.45	33	44	47	52	3.60	12
F241	5.17	81	81	78	75	4.21	18
H268	5.10	90	84	83	69	5.34	18
P391	4.55	29	35	41	34	5.78	12
P392	4.63	14	26	35	36	5.33	11
P395	5.90	71	71	67	60	6.43	18
P399	5.07	29	40	43	41	6.09	12
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P410	5.63	33	50	52	42	4.85	18
P411	5.02	29	41	45	42	4.58	12

USAF JOB INVENTORY TASK STATEMENTS:

E137 Annotate AF Forms 833 (Visual Information Support Request)  
E145 Complete AF Forms 833 (Visual Information Support Request)  
E164 Maintain audiovisual work order log  
F241 Proofread final graphics  
H268 Design layouts for certificates, awards, nameplates, or plaques  
P391 Convert graphic files from different users  
P392 Create electronic filing systems  
P395 Create new or original artwork using graphics imaging systems  
P399 Digitize artwork using digitizing tablets  
P404 Maintain external backup files  
P405 Maintain internal system or external morgue files  
P410 Produce color paper hardcopies of visual images  
P411 Produce monochrome paper hardcopies of visual images

TASK NUMBER: 00020

TASK STATEMENT:

PREPARE ARTWORK USING COLOR SEPARATION

TASK NOTES:

WITH COMPUTERS BEING INTERGRATED INTO GRAPHICS, THE EMPHASIS AND NEED FOR  
MANUAL COLOR SEPARATION IS DECREASING.

LIGHT COLORS ARE DONE FIRST AND IN SEQUENCE OF DARKNESS.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, TRACING PAPER, ILLUSTRATORS TOOLS AND SUPPLIES, LIGHT TABLE,  
PRINTER, CHART PAK REGISTRATION MARKS, PARAPAQUE, RUBY OR AMBERLITH,  
MAGNIFIER, SHADING SCREEN, ACETATE, TRIANGLES, TEMPLATES, SWIVEL KNIFES,  
REFERENCE FILES

REFERENCES:

MANUFACTURER'S MANUAL; NAVEDTRA 10472; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER



TASK NUMBER: 00020 (CONTINUED)

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
IMPROPER LIGHTING AND UNDER FIELD CONDITIONS  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

COMPUTER

- A - RETRIEVE GRAPHICS PROGRAM FROM FILES, IF AVAILABLE
- A - MAKE LAYER PER COLOR
- A - IDENTIFY COLOR FOR AREA
- A - PRINT EACH LAYER

MANUAL

- A - SECURE ORIGINAL ON LIGHT TABLE
- A - ESTABLISH REGISTRATION MARKS
- A - DRAW MASTERS WITH LETTERING AND LINE WORK USING PARAPAQUES
- A - DEVELOP EACH COLOR OVERLAY, LIGHTEST COLOR FIRST, WITH PEN AND INK OR PARAPAQUE
- A - PLACE NEXT SHEET OVER PREVIOUS SHEET, ALIGN REGISTRATION MARKS, AND DARKEN IN SECOND LIGHTEST COLOR
- A - REPEAT PROCESS UNTIL ALL COLOR OVERLAYS ARE ACCOMPLISHED

SKILLS:

- S - OPERATE COMPUTER
- S - OPERATE PRINTER
- S - USE ILLUSTRATORS TOOLS AND SUPPLIES
- S - USE LIGHT TABLE
- S - USE PARAPAQUE
- S - USE SHADING SCREEN
- S - USE REFERENCE FILES

TASK NUMBER: 00020 (CONTINUED)

KNOWLEDGE:

- K - APPLY COLOR SEPARATION TECHNIQUES
- K - APPLY SAFETY PROCEDURES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - APPLY LAYOUT PRINCIPLES

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
F211	4.47	43	52	56	52	4.37	18
F232	4.72	33	53	51	45	5.23	18
F233	3.57	24	27	31	36	5.83	7
F236	4.57	52	53	47	40	4.63	18
F238	3.82	48	41	39	32	4.29	12
F239	2.97	38	35	32	21	4.18	15
P389	4.75	67	50	44	33	5.33	18
P391	4.55	29	35	41	34	5.78	12
P392	4.63	14	26	35	36	5.33	11
P393	4.72	57	58	56	52	6.05	18
P394	3.92	29	32	31	23	6.44	12
P395	5.90	71	71	67	60	6.43	18
P396	3.38	19	19	20	21	6.03	7
P408	2.97	14	23	18	15	5.74	7

USAF JOB INVENTORY TASK STATEMENTS:

- F211 Draw reduced or enlarged graphic products using projection devices
- F232 Produce color separations
- F233 Produce comprehensives
- F236 Produce rough sketches
- F238 Produce thumbnail sketches
- F239 Produce tracing paper transfer sheets
- P389 Camera capture artwork
- P391 Convert graphic files from different users
- P392 Create electronic filing systems
- P393 Create graphics using 2-D graphics programs
- P394 Create graphics using 3-D graphics programs
- P395 Create new or original artwork using graphics imaging systems
- P396 Develop electronic color palettes
- P408 Prepare automated visual displays

TASK NUMBER: 00021

TASK STATEMENT:

PREPARE VISUAL USING VIDEO EQUIPMENT

TASK NOTES:

IMAGING SYSTEM IS COMMONLY USED IN REFERENCE TO VIDEO/TV CAMERA AND STILL VIDEO CAMERA.

THIS TASK IS INCREASING IN IMPORTANCE DUE TO THE AIR FORCE MOVING TOWARDS ELECTRONIC IMAGING CENTERS.

TRAINING RECOMMENDATIONS:

A 3-SKILL LEVEL			B 5-SKILL LEVEL			C 7-SKILL LEVEL		
(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT	(1) Course	(2) CDC	(3) OJT
X	X	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

COMPUTER, VIDEO/TV CAMERA, TABLETTES, MOUSE, MONITOR, STILL VIDEO CAMERA, DISC CARTRIDGE, 35MM FILM RECORDER, PRINTER

REFERENCES:

MANUFACTURER'S MANUAL; SOI; SOP; STP-11-25Q13-SM-TG

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
OPTICAL RESOLUTION OF CAMERA  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

TASK NUMBER: 00021 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

- A - ALIGN AND FOCUS VIDEO CAMERA
- A - FOCUS CAMERA ON OBJECT
- A - ENTER FREEZE COMMAND INTO COMPUTER
- A - MODIFY IMAGE AS REQUIRED
- A - PROJECT IMAGE AND ADJUST SO THAT KEYSTONE OR PIN CUSHION EFFECTS ARE ELIMINATED
- A - SAVE FINAL TO DISC OR DISC CARTRIDGE (P404, P405)
- A - PRINT HARD COPIES OF EACH VISUAL PRODUCED

SKILLS:

- S - OPERATE COMPUTER
- S - OPERATE STILL VIDEO CAMERA
- S - OPERATE VIDEO/TV CAMERA
- S - OPERATE 35MM FILM RECORDER (P407)
- S - OPERATE PRINTER
- S - USE DISC CARTRIDGE

KNOWLEDGES:

- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS
- K - APPLY BASIC DRAWING TECHNIQUES

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
P389	4.75	67	50	44	33	5.33	18
P392	4.63	14	26	35	36	5.33	11
P395	5.90	71	71	67	60	6.43	18
P398	2.20	0	8	8	5	7.23	2
P404	4.70	38	50	51	46	4.77	18
P405	4.50	38	50	53	49	4.77	18
P407	5.57	57	65	64	50	5.15	18
P408	2.97	14	23	18	15	5.74	7
P410	5.63	33	50	52	42	4.85	18
P411	5.02	29	41	45	42	4.58	12
P412	5.80	52	63	61	46	5.14	18

TASK NUMBER: 00021 (CONTINUED)

USAF JOB INVENTORY TASK STATEMENTS:

- P389 Camera capture artwork
- P392 Create electronic filing systems
- P395 Create new or original artwork using graphics imaging systems
- P398 Develop video animation
- P404 Maintain external backup files
- P405 Maintain internal system or external morgue files
- P407 Operate 35mm film recorders
- P408 Prepare automated visual displays
- P410 Produce color paper hardcopies of visual images
- P411 Produce monochrome paper hardcopies of visual images
- P412 Produce slides using 35mm recorders

TASK NUMBER: 00022

TASK STATEMENT:

PRODUCE SLIDES WITH 35MM CAMERA/RECORDER

TASK NOTES:

SECURITY PRECAUTIONS MUST BE ADHERED TO FOR CLASSIFIED BRIEFINGS.

TASK PERFORMED BY 5- AND 7-LEVEL PERSONNEL ONLY IN AFLC.

TRAINING RECOMMENDATIONS:

A			B			C		
<u>3-SKILL LEVEL</u>			<u>5-SKILL LEVEL</u>			<u>7-SKILL LEVEL</u>		
(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
<u>Course</u>	<u>CDC</u>	<u>OJT</u>	<u>Course</u>	<u>CDC</u>	<u>OJT</u>	<u>Course</u>	<u>CDC</u>	<u>OJT</u>
X	-	X	-	X	X	-	-	X

EQUIPMENT, TOOLS, SUPPLIES:

35MM CAMERA/RECORDER, 35MM FILM, SLIDE FRAMES AND MONITOR, COMPUTER, 35MM FILM PROCESSOR, SLIDE MOUNTER, FLAT BED SCANNER, PROCESSING PACK

REFERENCES:

AFR 205-1; MANUFACTURER'S MANUAL; SOI; SOP

CONDITION:

TEMPERATURE-CONTROLLED ENVIRONMENT

CUE:

RECEIVE WORK ORDER

CONSTRAINTS:

COMPUTER DOWN  
LACK OF SUPPLIES  
SHORT SUSPENSE  
LIGHTNING WITHIN 3 TO 5 MILES  
POWER OUTAGE

TASK NUMBER: 00022 (CONTINUED)

JOB STANDARDS:

IAW REFERENCES AND WORK ORDER REQUIREMENTS

ACTIVITIES:

- A - RETRIEVE FILES FROM DISC
- A - DEFINE BRIEFING PARAMETERS
- A - ENTER FILE NAMES IN PROPER SEQUENCE OR SCAN IMAGE AS NECESSARY
- A - REFORMAT PROGRAM
- A - CONVERT INTO DISPLAY FORMAT
- A - EXIT PROGRAM AND REVIEW FINAL PRODUCT
- A - MOUNT FILM HOLDER TO CAMERA
- A - LOAD 35MM FILM INTO CAMERA
- A - DISPLAY PRODUCT ON MONITOR
- A - EXPOSE FILM BY A CONTINUOUS LINK BETWEEN CAMERA AND MONITOR
- A - UNLOAD FILM FROM CAMERA
- A - LOAD FILM INTO PROCESSING PACK OR SEND FILM TO PHOTO LAB
- A - TURN HANDLE UNTIL FILM IS COMPLETELY EXTENDED
- A - REWIND AND UNLOAD FILM FROM PROCESSING PACK
- A - PLACE FILM IN SLIDE MONITOR
- A - FEED FILM INTO MOUNT, CUT, AND SEAL

SKILLS:

- S - OPERATE 35MM CAMERA/RECORDER (P407)
- S - OPERATE COMPUTER
- S - OPERATE FILM PROCESSOR
- S - OPERATE SLIDE MOUNTER
- S - OPERATE SLIDE MONITOR
- S - USE FLAT BED SCANNER
- S - USE PROCESSING PACK

KNOWLEDGES:

- K - APPLY CUSTOMER RELATIONS TECHNIQUES
- K - APPLY HAZARDOUS AND TOXIC WASTE DISPOSAL PROCEDURES
- K - APPLY OPSEC, COMSEC, AND PHYSICAL SECURITY PRECAUTIONS
- K - APPLY TECHNICAL DATA
- K - APPLY WORK ORDER REQUIREMENTS

TASK NUMBER: 00022 (CONTINUED)

RELATED OCCUPATIONAL SURVEY DATA:

<u>DUTY/ TASK</u>	<u>TNG EMP</u>	<u>1ST JOB</u>	<u>1ST ENL</u>	<u>5 LVL</u>	<u>7 LVL</u>	<u>TSK DIF</u>	<u>ATI</u>
P389	4.75	67	50	44	33	5.33	18
P392	4.63	14	26	35	36	5.33	11
P393	4.72	57	58	56	52	6.05	18
P394	3.92	29	32	31	23	6.44	12
P395	5.90	71	71	67	60	6.43	18
P396	3.38	19	19	20	21	6.03	7
P406	2.60	10	16	17	15	5.68	7
P407	5.57	57	65	64	50	5.15	18
P408	2.97	14	23	18	15	5.74	7
P412	5.80	52	63	61	46	5.14	18
P416	2.45	10	13	14	11	6.39	7

USAF JOB INVENTORY TASK STATEMENTS:

P389 Camera capture artwork  
P392 Create electronic filing systems  
P393 Create graphics using 2-D graphics programs  
P394 Create graphics using 3-D graphics programs  
P395 Create new or original artwork using graphics imaging systems  
P396 Develop electronic color palettes  
P406 Modify alphabet character sets or fonts  
P407 Operate 35mm film recorders  
P408 Prepare automated visual displays  
P412 Produce slides using 35mm recorders  
P416 Write automated command files